Possible existence of...

which are displaced from the field-free level by $\Delta\varepsilon_1 = 0$ and $\Delta\varepsilon_{2,3} = \pm\gamma' H$, where

$$i\gamma' = \frac{e}{2mc}\langle 1|M_y|3\rangle = \frac{e}{2mc}\langle 2|M_x|3\rangle = \frac{e}{2mc}\langle 1|M_x|2\rangle. \quad A$$

The intensity of the magnetic dipole transitions from the ground state of Γ_{15}' in the magnetic field are described by

$$|\langle \eta, 1|\hat{W}^x|0\rangle|^2 = g'|\Delta|^2|\cos\theta\cos\varphi H_x + H_y\cos\theta\sin\varphi - H_z\sin\theta|^2,$$

$$|\langle \eta, 1|\hat{W}^y|0\rangle|^2 = g'|\Delta|^2|H_x\sin\varphi - H_y\cos\varphi|^2,$$

$$|\langle \eta, 2|\hat{W}^z|0\rangle|^2 = |\langle \eta, 3|\hat{W}^z|0\rangle|^2 = g'|\Delta|^2\frac{H^2 - H_z}{2H^2}\Big|-\sin\theta + \quad B$$

$$+\frac{H_xH_z + iHH_y}{H^2 - H_z^2}\cos\theta\sin\varphi + \frac{H_yH_z - iHH_x}{H^2 - H_z^2}\cos\theta\cos\varphi|^2,$$

$$|\langle \eta, 2|\hat{W}^y|0\rangle|^2 = |\langle \eta, 3|\hat{W}^y|0\rangle|^2 =$$

$$= g'|\Delta|^2\frac{1}{2H^2}\left|\frac{H_xH_z + iHH_y}{\sqrt{H^2 - H_z^2}}\cos\varphi - \frac{H_yH_z - iHH_x}{\sqrt{H^2 - H_z^2}}\sin\varphi\right|^2.$$

Card 5/6

$$\Delta = \langle 1|\hat{M}_x|0\rangle.$$

S/181/61/003/006/021/031
B102/B214

Possible existence of...

There are 5 Soviet-bloc references.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova (Leningrad State University imeni A. A. Zhdanov), Ural'skiy gosudarstvennyy universitet im. A. M. Gor'kogo Sverdlovsk (Ural State University imeni A. M. Gor'kiy, Sverdlovsk)

SUBMITTED: December 7, 1960 (initially),
January 20, 1961 (after revision)

Card 6/6

KARGAPOLOVA, A. P.

N

USSR / Weeds and Weed Control.

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1944

Author : Kargapolova, A. P.
Inst : Altay Agricultural Institute
Title : Chemical Method of Destroying Weeds in Corn Plantings

Orig Pub : Tr. Altaysk. s.-kh. in-tn, 1957, vyp 5, 118-123

Abstract : Preparations of 2,4-D and MCPA were studied in 1956 at the training-experimental farm of the Altay Agricultural Institute; certain plots were sprayed with doses of 1.5 and 2 kg/hectare for 2-3 days before the corn emerged from the ground. Then these same plots were sprayed with a dose of 0.4-0.5 kg/hectare during the 4-5 leaf stage. In the second variant 0.8-1.0 kg/hectare of the spray was applied to the

Card 1/2

N

USSR / Weeds and Weed Control.

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 1944

plots in the 4-5 leaf stage. In the third variant the plots were sprayed in the 8-9 leaf stage with a dosage of 0.8-1 kg/hectare of active ingredients. The standard amount of solution used was 200 liter/hectare. The most effective variant was a combination of spraying before sprouts appeared and in the phase of 4-5 leaves with preparations of 2,4-D or MCPA in a dosage of 2 + 0.4 kg/hectare. Contamination by broad-leaved weeds was lessened 87-93%, part of the weeds germinating with the grains were killed, and the harvest of the green portion of the corn increased 12.5-20.5%. MCPA herbicide gave the best results. -- L. D. Stonov

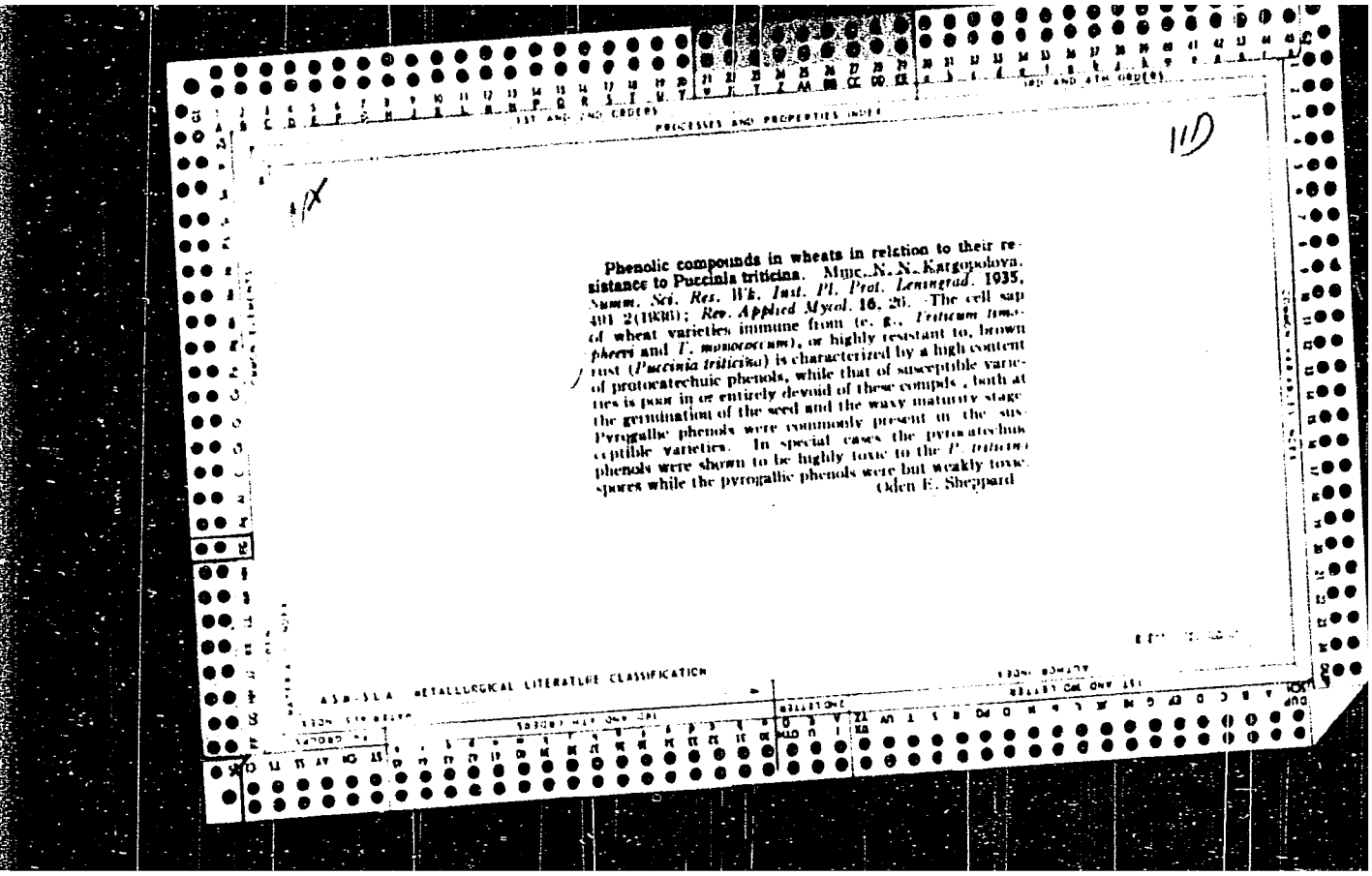
Card 2/2

KARGAPOLOVA, L. I., Cand Biol Sci (diss) -- "The morphology of the salivary glands, liver, and pancreas of karakul sheep and Uzbek goats". Samarkand, 1960. 18 pp (State Committee on Higher and Inter Spec Educ of the Council of Ministers Uzbek SSR, Uzbek Agric Inst im V. V. Kuybyshev), 150 copies (KL, No 11, 1960, 130)

PROKOP'YEV, D.I.; KARGAPOLOVA, M.G.

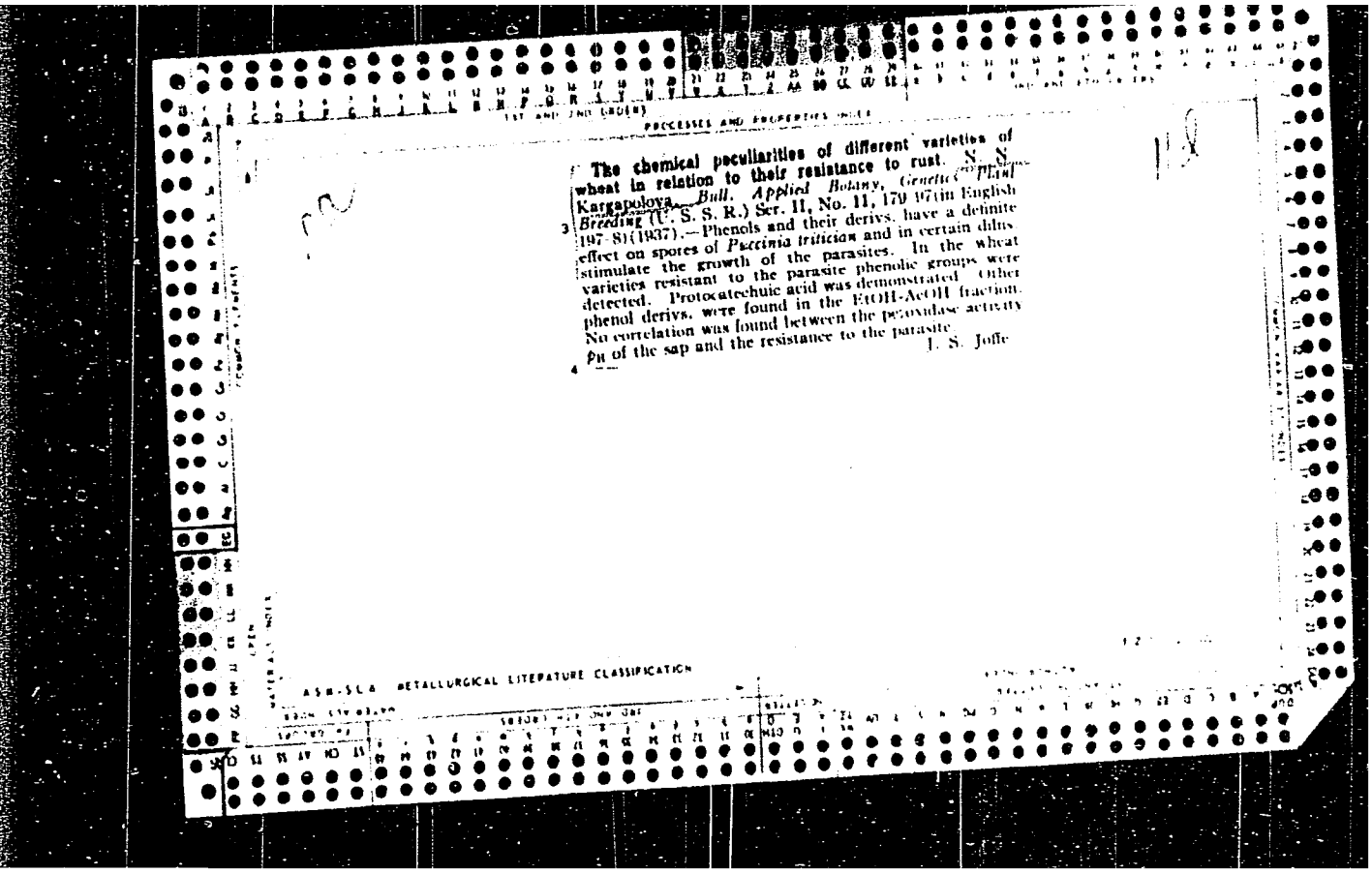
Therapeutic results in extrapleural pneumonolysis. Probl. tub. 40 no.6:101-103 '62 (MIRA 16:12)

1. Iz Respublikanskogo protivotuberkuleznogo ob"yedineniya (glavnyy vrach G.V. Shatrova) Udmurtskoy ASSR.



Phenolic compounds in wheats in relation to their resistance to Puccinia triticina. Mme. N. N. Kargopolova. *Summ. Sci. Res. Wk. Inst. Pl. Prot. Leningrad.* 1935, 401 2(1936); *Rev. Applied Mycol.* 16, 20. The cell sap of wheat varieties immune from (e. g., *Triticum timopheevi* and *T. monococcum*), or highly resistant to, brown rust (*Puccinia triticina*) is characterized by a high content of protocatechuic phenols, while that of susceptible varieties is poor in or entirely devoid of these compds., both at the germination of the seed and the waxy maturity stage. Pyrogallic phenols were commonly present in the susceptible varieties. In special cases the pyrocatechuic phenols were shown to be highly toxic to the *P. triticina* spores while the pyrogallic phenols were but weakly toxic.

Olen E. Sheppard



PROCESSES AND PROPERTIES INDEX

The chemical peculiarities of different varieties of wheat in relation to their resistance to rust. S. S. Kargapolova. *Bull. Applied Botany, Genetics Plant Breeding* (U. S. S. R.) Ser. II, No. 11, 179-97(in English 197-8)(1937).—Phenols and their derivs. have a definite effect on spores of *Puccinia triticina* and in certain dilns. stimulate the growth of the parasites. In the wheat varieties resistant to the parasite phenolic groups were detected. Protocatechuic acid was demonstrated. Other phenol derivs. were found in the EtOH-AcOH fraction. No correlation was found between the peroxidase activity of the sap and the resistance to the parasite. J. S. Joffe

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS — 3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

AM

Kardapolova (Mme N. N.). Анатомические особенности различных по устойчивости к **Phytophthora infestans DB.** сортов и видов Картофеля. [Anatomical peculiarities of varieties and species of the Potato, differing in their resistance to *Phytophthora infestans* de Bary.]—*Bull. appl. Bot. Select.*, *1937*, Ser. II, 11, pp. 215-226, 12 figs., 1937. [English summary.]

From a review of the relevant literature and also from her own anatomical studies of a number of potato species and varieties, ranging in reaction to *Phytophthora infestans* [see preceding abstract] from high susceptibility in *Solanum leptostigma* and *S. areca-papa* to high resistance in *S. neoantipoviczii* and *S. demissum*, the author concludes that no definite correlation can be established between susceptibility and anatomical structure.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

KHARGAPOLOVA, N. N.

Effect of micro-elements on yields of tomatoes. N. N. Kargapolova (Sad i Ogorod, 1953, No. 6, 43—44).—Seed soaked twice for 24 hr. in aq. 0·02% $CuSO_4$, 0·2% $ZnSO_4$, or 0·02% HBO_3 produced plants bearing increased yields of earlier fruit. Similar results were obtained by four applications of 0·005% solutions to pricked-out seedlings.

Hort. Abstr. (A. G. P.)

KARGAPOLOVA, N.N.

USSR / Cultivated Plants. Potatoes. Vegetables. Melons. M

Abs Jour : Ref Zhur - Biol., No 8, 1958, No 34694

Author : Kargapolova, N. N.
Inst : AS Latv. SSR
Title : Acceleration of the Ripening of Tomatoes and Potatoes under the Influence of Micronutrients.

Orig Pub : V. sb.: Mikroelementy v s. kh. i meditsine, Riga, AN LatvSSR, 1956, 409-415

Abstract : In experiments of several years' standing, conducted by the Selection Station of Leningrad, soaking of seed for a two-day long period or spraying tomato seedlings after picking, as well as four to five sprinklings of the tubers of potatoes in the stage of vernalization at intervals of 6 to 7 days with weak solutions (0.02 to 0.005%) of $CuSO_4$, H_3BO_3, $ZnSO_4$ and

Card 1/2

BRYKIN, P.A.; KARGASHINA, V.A.

Technical basis of production standards for work in photographic laboratories. Geod.i kart. no.3:55-61 Mr '60. (MIRA 13:6)
(Photography--Production standards)

YEFIMOV, V.A., inzhener; KARGASHINSKIY, A.D., inzhener.

[Laying and assembling cables for signaling central control block systems] Prokladka i montazh kabelei STsB. Moskva, Gos. transp. zhel-dor. izd-vo, 1947. 219 p. (MLRA 7:4)
(Electric cables) (Railroads—Signaling)

KARGASHINSKIY, A.D., inzh.

Small switch interlocking systems. Avtom. telem. i sviaz' 8 no.9:13-15 S '64. (MIRA 17:10)

KARGAZHANOV, Z.

Two different interpretations of the concept "minimum industrial content." Vest. AN Kazakh. SSR 19 no.7:49-60 Jl '63. (MIRA 17:2)

YERGALIYEV, A.Ye.; KARGAZHANOV, Z.

Determining the minimum industrial metal content of ore from the economic point of view. Trudy Alt. GMNII AN Kazakh. SSR 10: 146-168 '61. (MIRA 14:9)

(Ores--Sampling and estimation)

KARGAZHANOV, Z.

Practice of establishing an industrial minimum for operative and projected mines with disseminated ores. Trudy Alt. GMNII AN Kazakh. SSR 15:188-196 '63. (MIRA 17:3)

YERGALIYEV, A.Ye.; KARGAZHANOV, Z.K.

Existing methods of determining the minimum commercial metal content of ores. Trudy Alt. GMNII AN Kazakh. SSR 13:54-70 '62. (MIRA 16:3)
(Ores--Sampling and estimation)

KARGE, Z.

Progress in the construction of rollingmachine gears. Pt. 1. (To be contd)
p.145

PRZEGLAD MECHANICZNY. (Stowarzysenie Inzynierow i Technikow Mechanikow Polskich) Warszawa. , Poland
Vol.18, no.5, Mar. 1959

Monthly list of East European Accessions (EEAI) LC, Vol.8, no.7, July 1959

Uncl.

KARGL, Z.

Progress in the construction rolling-machine gears. Pt. 2. p. 180

PRZEGLAD MECHANICZNY. (Stowarzysenie Inzynierow i Technikow Mechanikow Polskich)
Warszawa, Poland
Vol. 18, no. 5, Mar. 1959

Monthly List of East European Accession (EEAI) LC, Vol. 8, no. 7, July, 1959

Uncl.

KARGE, Zbigniew

Selection analysis of transmission oils. Problemy proj hut maszyn 10 no.5:141-145 My '62.

1. Biprohut, Gliwice.

KARGER, B.P., podpolkovnik, voyennyy shturman 1-go klassa

Determining the elements of a submarine's movements for aerial bombing in training area conditions. Mor. sbor. 46 no.8:59-63 Ag '63. (MIRA 16:10)

(Submarine boats) (Bombing, Aerial)

KARGER, E.

Wireless Engineer
July, 1954
Circuits and Circuit Elements

621.318.423 2021
Design of High-Frequency Coils for High Currents.—E. Karger. (*Funk u. Ton*, Jan. 1954, Vol. 8, No. 1, pp. 7–18.) A practical guide to the design of single-layer air-cored cylindrical coils and a short-circuit variometer. The dissipation of heat, electrical breakdown potential, and the various losses are considered. Formulae, tables and an inductance/coil-dimensions nomogram are given.

MACIEJEWSKI, A.; RUSZKOWSKI, M.; MAZURKIEWICZ, M.; PANUSZ, H.; BOBINSKI, H.; HEWELKE, J.; KARGER, E.

Studies on blood proteins in children in general anesthesia. Pediat. polska 34 no.1:37-51 Jan 59.

1. Z Kliniki Chirurgii Dziecięcej A. M. w Łodzi Kierownik: prof. dr med. A. Maciejewski. Adres: Łódź, ul. Armii Czerwonej 15.

(ANESTHESIA, eff.
on blood proteins in child. (Pol))
(BLOOD PROTEINS,
eff. of anesth. in child. (Pol))

ARMATYS, J.; KARGER, E.

A method for endotracheal general anesthesia in surgical interventions on experimental animals. Acta physiol. polon. 10 no.3: 435-438 May-June 59.

1. Z Zakladu Fizjologii A. M. w Lodzi Kierownik; z-ca prof. dr J. Sysa Z Kliniki Chirurgii Dziecicej A. M. w Lodzi Kierownik: prof. dr A. Maciejewski.
(ANESTHESIA INTRATRACHEAL)

BODALSKI, Jerzy; KARGER, Eugeniusz; JAROSIK, Napoleon

The problem of resuscitation in sudden death in infants (apropos of a case). Pediat. Pol. 39 no.3:281-286 Mr'64

1. Z II Kliniki Chorob Dzieci AM w Lodzi (kierownik: prof.dr. med. F.Redlich) i z Kliniki Chirurgii Dzieciecej AM w Lodzi (kierownik: prof.dr.med. A.Maciejewski).

DANILEVSKIY, Viktor Vasil'yevich[deceased]; KARGER, M.K., otv. red.; BYSTROV, P.P., red.izd-va; BOCHEVER, V.T., tekhn. red.

[Lomonosov and decorative glass] Lomonosov i khudozhestvennoe steklo. Moskva, Izd-vo "Nauka," 1964. 441 p. (MIRA 17:4)

1. Deystvitel'nyy chlen AN Ukr.SSR (for Danilevskiy).

KARNER, R.

Comparing cargo offers on cargo tramps in the Baltic. p. 356

TECHNIKA I GOSPODARKA MORSKA. (Naczelna Organizacja Techniczna, Instytut Morski i Morski Instytut Rybacki) Gdansk, Poland. Vol. 9, no. 12, Dec. 1959

Monthly List of East European Accessions (EEAI) LC Vol. 1, no. 8, August, 1959

Uncl.

1. KARGER, Ye., Eng.

2. USSR (600)

4. Dairying - Apparatus and Supplies

7. Continuous motion sterilizer, Mol. prom., 13, No. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February, 1953. Unclassified.

PROCHAZKA,J.; SIMKOVA,V.; HAVELKA,J.; HEJZLAR,M.; VIKLICKY,J.; KARGEROVA,A.; KUBIKOVA,M.

On the problem of the penetration of the placenta by chloramphenicol. Preliminary report. Cesk. pediat. 19 no.4:311-314 Ap'64.

1. Laboratory pro vyzkum patologie, terapie a prevence infekcnich nemoci fakulty detskeho lekarstvi KU v Praze (vedouci: prof.dr. J.Prochazka, DrSc.); Vojensky ustav hygieny, epidemiologie a mikrobioloie v Praze (prednosta:MUDr.M.Hejzlar) a Patologickoanatomicke oddeleni nemocnice na Bulovce, (vedouci: doc.dr. J.Viklicky).

*

SOBEK,V.; KARGEROVA, A.; PADEVET, M.

Effect of pyrocatechin on the detoxication of neomycin. Bratisl. lek. listy 45 no.3:142-146 15 F '65.

1. Laborator pro vyzkum pathologie, terapie a prevence infekcnich chorob; Fakulty detskeho lekarstvi Karlovy Univerzity v Praze (reditel: prof. MUDr. J. Prochazka, DrSc.).

KARGI, R.

Sugar-beet irrigation

P. 29, Listy Cukrovarnicke) Vol. 73, No. 2, Feb. 1957, Czechoslovakia

SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC. - VOL. 7, NO. 1, JAN. 1958

KARGIN, A.A.

130-9-3/21

AUTHORS: Baranovskiy, P.G., and Kargin, A.A.

TITLE: Controlling Blast-Furnace Operation from the Difference in Static Pressures. (Kontrol' khoda domennykh pechey po raznosti staticheskikh davleniy).

PERIODICAL: Metallurg, 1957, Nr 9, pp.5-7 (USSR).

ABSTRACT: Determinations of the static pressures of the hot blast, part of the way up the stack, and in the throat give a useful indication of the state of the furnace, and such measurements are carried out at several Soviet works. In the present article the recording arrangements adopted at the Kuznetsk metallurgical combine is described and typical traces shown. The arrangement has functioned without interruption for over a year under the difficult conditions of stack pressure measurement: it is provided with a time-relay operated air blast for clearing the tube. The reliability of the records has enabled them to be used for controlling furnace operation. There are 2 figures.

ASSOCIATION: Kuznetsk Metallurgical Combine (Kuznetskiy Metallurgicheskiy Kombinat)

AVAILABLE: Library of Congress.

Card 1/1

SOV/133-58-12-4/19

AUTHORS: Chernov N.N., (Candidate of Technical Science), Docent, Zhigulev P.G., Baranovskiy P.G., Obsharov,V.M., Rayev,Yu. O., and Kargin A.A. (Engineers).

TITLE: An Automatic Control of the Operation of a Blast Furnace Based on the Drop in Static Pressure (Avtomaticheskoye regulirovaniye khoda domennoy pechi po perepadu staticheskogo davleniya)

PERIODICAL: Stal', 1958, Nr 12, pp 1071-1077 (USSR)

ABSTRACT: The Central Automation Laboratory designed experimental equipment for the automatic control of blast furnace operation based on the pressure drop between the bustle pipe and furnace throat. The signal from the differential manometer acted in turn on the following controls: top pressure, temperature and humidity of blast, blast volume. The equipment was tested on a furnace in the Zaporozhstal' Works in 1954 and on the Kuznetsk Metallurgical Combine in 1956. It was soon found that the system as designed was unworkable. The investigations carried out in the Kuznetsk Combine indicated that changes in top pressure influence mainly the pressure drop between the throat and the middle of the stack, and changes in the blast

Card 1/5

humidity, blast temperature and blast volume affect mainly the pressure drop between the middle of the stack and tuyere level. It was therefore decided to base the automatic control on partial pressure drops between the tuyere level and the middle of the stack and between the middle of the stack and the throat. These partial drops in static pressure were measured with two DPES type differential manometers with a double electronic bridge (two standard electronic bridges operating on to a common recording strip). The reliability of the operation of this equipment depends mainly on the state of the opening in the furnace stack for measuring static pressure. This was successfully solved by arranging the opening through a cooler and cleaning it by a pneumatically operated rod (Figs 1 and 2). The recorded curve of the pressure drop between the above two levels during normal furnace operation is shown in Fig 3; during top hanging of the burden in Fig 4; during bottom hanging in Fig 5, and when the hearth is filled with iron and

slag, Fig 6. After preliminary investigation of the influence of the individual operating factors on the partial pressure drops a scheme for the automatic control was evolved, the electrical circuit diagram of which is given in Fig 7. If the top pressure drop exceeds a certain value then the controls will bring about a certain increase in the top pressure. If after some predetermined time the top pressure drop is not returned to its normal value then the blast volume will decrease by increments with a certain time interval between each increment. When a complete permitted correction of the blast volume is made, the controller of the bottom pressure drop is put into operation and begins to correct the temperature or humidity and volume of the blast. As a result of the above corrections the pressure drop may be restored to the required value. If the bottom pressure drop does not
Card 3/5 exceed normal value, then the blast volume begins to increase until it is returned to normal value and is then followed by the restoration of the top pressure. If the

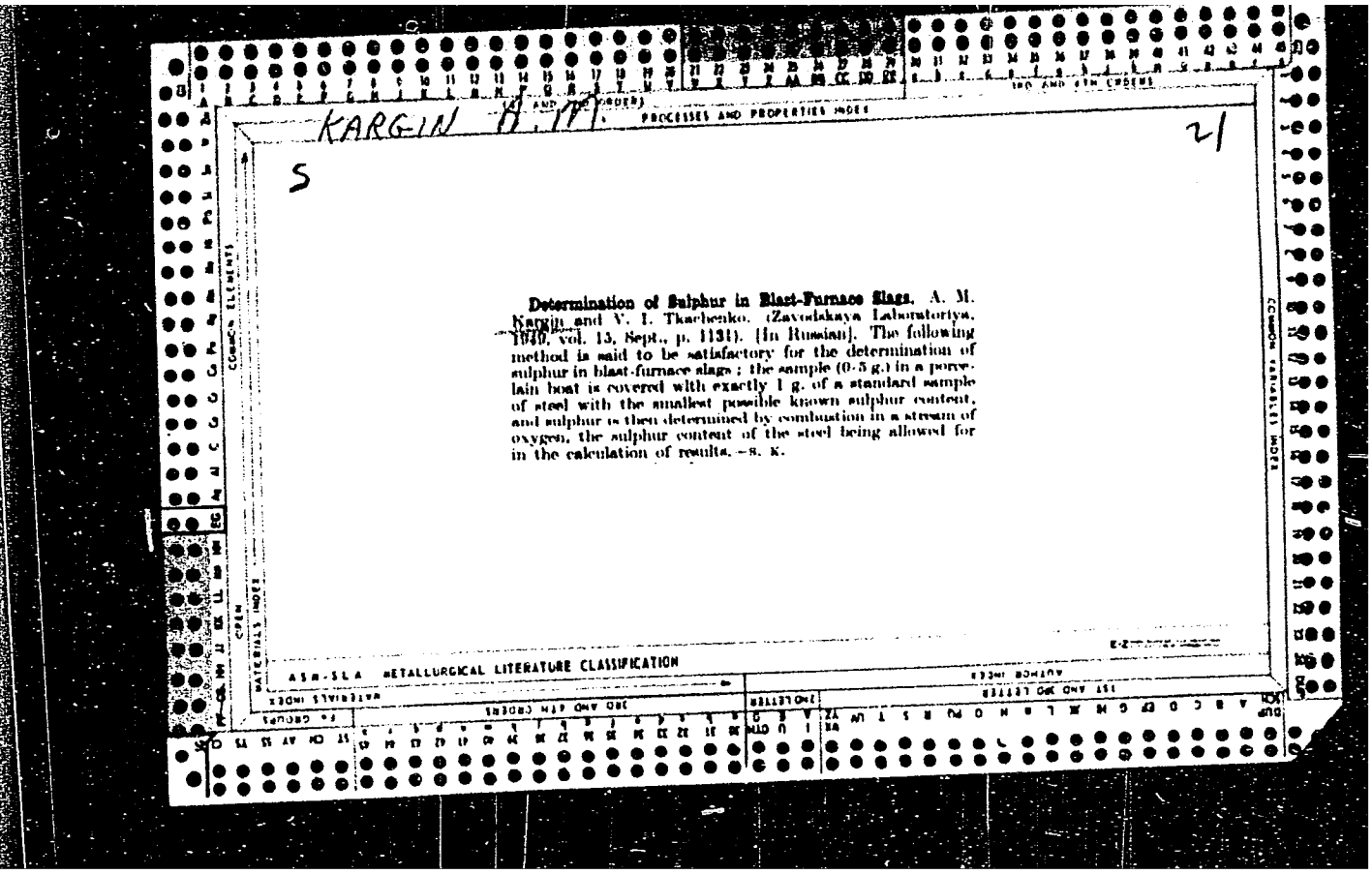
An Automatic Control of the Operation of a Blast Furnace Based on the Drop in Static Pressure

bottom pressure drop exceeds the normal value then the controller of the top pressure drop is not permitted to restore normal operating conditions, but instead the controller of the bottom pressure drop begins to introduce corrections at first of blast temperature or moisture (in stages of 20°C and 2g/m^3) and then of the blast volume. Between each correction a time interval of 5 - 7 minutes is maintained. The restoration of the normal operating conditions is done in reverse order. If the pressure drop falls below the predetermined value, then at first either the blast temperature is increased or its humidity decreased and then the blast volume is

An Automatic Control of the Operation of a Blast Furnace Based on the Drop in Static Pressure

increased. The system was tested during a period of two weeks and in the great majority of cases gave the correct solutions.
There are 7 figures.

ASSOCIATION: Sibirskiy metallurgicheskiy institut i Kuznetskiy metallurgicheskiy kombinat (Siberian Metallurgical Institute and Kuznetsk Metallurgical Combine)



KARGIN B.M.

S

21

Determination of Sulphur in Blast-Furnace Slags. A. M. Kargin and V. I. Tkachenko. (Zavodskaya Laboratoriya, 1940, vol. 13, Sept., p. 1131). [In Russian]. The following method is said to be satisfactory for the determination of sulphur in blast-furnace slags; the sample (0·5 g.) in a porcelain boat is covered with exactly 1 g. of a standard sample of steel with the smallest possible known sulphur content, and sulphur is then determined by combustion in a stream of oxygen, the sulphur content of the steel being allowed for in the calculation of results.—S. K.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Kargin, D.M.

3

Protection of Cooled Parts of Open-Hearth Furnaces by an Electrolytic Polishing Method. [illegible] Kargin, [illegible]menko, [illegible] (Stal', 195[illegible], [illegible] (8), 749–752). [In Russian]. A method, tested in the laboratory and on a working O.H. furnace, is described in which water-cooled metal surfaces are protected from corrosion and scaling by electrolytic polishing. The metal surface is made the anode, the cooling water being the electrolyte, and a current is passed at 0.[illegible]–0.003 [illegible] (for medium and very hard water). During the tests this technique reduced the thickness of the deposit of calcium and magnesium salts to 1/8–1/4 of the normal value. The current consumed for the protection of all the water-cooled parts of a furnace is 1.5 kWh per day.

Konstantinov Metallurgical Plant

KARGIN, A.V.

Investigation of light scattering from mixtures of high polymers. S. S. Voyutskii, A. D. Zaionchkovskii, A. V. Kargin, [illegible] Kalinkova (*Doklady Akad. Nauk S.S.S.R.* [illegible]).—The light scattering from films of polyvinyl chloride increases with their content of butadiene-acrylonitrile copolymer (I), up to a max. after which it falls to zero for pure I; it also increases with the elongation of the film, an effect which is diminished by addition of I. Plasticizing the film with dibutyl causes little change in light scattering, and large additions reverse the effect of elongation, so that the scattering actually decreases with elongation. Elongation reduces the density of the films by an amount wh h varies inversely with their elasticity, which suggests that stretchi / causes a diminution in the closeness of packing of the polym chains (through non-uniform stress distribution) and even perhaps formation of holes.

R. C. Murray.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000720710015-8"

KARGIN, B.A.; KABANOV, V.A.; ZUBOV, V.P.; PAPISOV, I.M.

Initiation of low temperature polymerization in systems obtained by the molecular beam method. Vysokom.soed. 3 no.3:426-434 Mr '61. (MIRA 14:6)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
(Polymerization) (Molecular beams)

KARGIN, B.A., inzh.

Mimic bus for establishing the position of transformer taps.
Energetik 10 no.3:23-24 Mr '62. (MIRA 15:2)
(Electric transformers)
(Electric power distribution)

SOV/122-59-5-14/32

AUTHORS: Bocherov, A.A., Engineer, and Kargin, D.D., Engineer

TITLE: A New Heavy Forging Hammer (Novyy tyazhelyy molot)

PERIODICAL: Vestnik mashinostroyeniya, 1959, Nr 5, p 45 (USSR)

ABSTRACT: A pneumatic forging hammer, model M418, is described, made by the Voronezh Works of Press Working Equipment (Voronezhskiy zavod kuznechno-pressovogo oborudovaniya) imeni M.I.Kalinin. The nominal ram weight is 1000 kg operating at 95 blows per minute. The maximum opening is 770 mm. The installed power is 75 kw. The anvil weight is 12 tons and the remainder weighs 26 tons. The machine requires no outside compressed air services. The forging can be held under pressure. There is 1 photograph.

Card 1/1

KARGIN, D.I., professor, doktor tekhnicheskikh nauk.

Graphic solution of a problem in theoretical mechanics concerning the screw displacement of a rigid body. Sbor. LIIZHT no.144:222-227 '52. (MIRA 8:4)
(Geometry, Descriptive) (Mechanics)

KARGIN, D.I.

Historical outline of the development of drawing instruments.
Trudy Inst.ist.est.i tekh. 25:270-310 '59.
(MIRA 13:4)

(Drawing instruments)

SERKIN, A.F., inzh.; KARGIN, G.P., inzh.

"Struggle with the coal and rock dust in mines." Reviewed by A.F.Serkin, G.P. Kargin. Bezop. truda v prom. 5 no.8:37-38 Ag '61. (MIRA 14:8)

1. Vsesoyuznyy tsentral'nyy proyektnyy institut po proyektirovaniyu shakhtnogo stroitel'stva kamennougol'noy promyshlennosti.
(Mine dusts)

KARGIN, G.P., inzh.

Purification of mine water used for dust control in mines. Bezop truda v prom. 7 no.4:22-23 Ap '63. (MIRA 16:4)

1. Vsesoyuznyy tsentral'nyy gosudarstvennyy institut po proyektirovaniyu shakht.
(Water—Purification) (Mine dusts)

KOLBENKOV, S.P.; MEDYANTSEV, A.N.; IOFIS, M.A.; KOROTKOV, M.V.; MULLER, R.A.; YUSHIN, A.I.; MELAMUT, L.Sh.; KAPGIN, G.P.; GERTNER, P.F.; ZARETSKIY, K.S.; CHECHKOV, L.V., red.izd-va; MAKSIMOVA, V.V., tekhn. red.

[Designing, constructing, and protecting buildings and structures on foundations undercut by mining] Proektirovanie, stroitel'stvo i okhrana zdanii i sooruzhenii na podrabatyvaemykh territoriiakh. Moskva, Gosgortekhizdat, 1963. 451 p. (MIRA 16:8)
(Earth movements and building)

ACC NR: AP7001202 (A) SOURCE CODE: UR/0407/65/000/05-/0105/0107

AUTHOR: Kargin, G. V. (Moscow)

ORG: none

TITLE: Surface finish of electrochemically machined heat-resistant steels and alloys

SOURCE: Elektronnaya obrabotka materialov, no. 5-6, 1965, 105-107

TOPIC TAGS: heat resistant steel, heat resistant alloy, stainless steel, electrochemical machining, steel electrochemical machining, steel surface finish/EI481 steel, EI437 B steel, EI617 steel, EI929 B steel, OKhN3M steel, EI766 steel

ABSTRACT: The dependence of the quality of surface finish on the finishing-current density in the electrochemical machining of heat-treated heat-resistant steels and alloys has been investigated. Specimens of 4Kh12N8G8MFB (EI481), 33KhN3M, KhN77TYuR (EI437B), KhN70VMTYu (EI617), EP57 (EI929B), and EI766 steels and alloys were machined in a 15% NaCl aqueous solution pumped into the interelectrode gap at a pressure of 4 atm at a current density of 5—23 amp/cm^2 and a voltage of 9—15 v. With prolonged machining time and simultaneously decreased current density, the surface finish of all investigated specimens improved, reached an optimum quality, and then deteriorated. This appears to result from the different rates of dissolution of the grains and the grain boundaries. The grain body dissolution depended on the machined metal and decreased with increasing current density. It appears

Card 1/2

ACC NR: AP7001202

that at fairly high current densities, the dissolution of grains and the grain boundaries proceeded at the same rate, and, in such cases, no etching marks were observed on the machined surface. No etching marks were observed at current densities higher than 50—60 amp/cm^2 for KhN77TYuR (EI437B), KhN70VMTYu (EI617), EP57 (EI929B) and EI766 alloys, at current densities of 18—20 amp/cm^2 for 4Kh12N8G8MFB (EI481) stainless steel, and less than 7 amp/cm^2 for 33KhN3MA (OKhN3M) low-alloy steel. Orig. art. has: 7 figures. [MS]

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 002/ ATD PRESS: 5110

Card 2/2

ACC NR: AP7001199 (A,N) SOURCE CODE: UR/0407/65/000/05-/0088/0092

AUTHOR: Kargin, G. V. (Moscow)

ORG: none

TITLE: Experimental determination of edge rounding in precise electrochemical metal machining

SOURCE: Elektronnaya obrabotka materialov, no. 5-6, 1965, 88-92

TOPIC TAGS: electrochemical machining, metal machining

ABSTRACT: A small (0.1—0.2 mm) rounding off the workpiece edges was noticed in the course of electrochemical deburring operations. In this connection, a special investigation of rounding off rectangular edges of a heat-resistant steel, a heat-resistant alloy, and a titanium alloy was conducted. Specimens mounted in a special holder could be positioned with respect to the cathode; the electrolyte

Card 1/2

ACC NR: AP7001199

(15% NaCl) was injected laterally into the specimen-cathode gap; source voltage, 9—15 v; pressure, 4—5 kg/cm^2. The effect of machining time (up to 120 sec) on rounding off geometry (radius of curvature up to 1 mm) was investigated. The edge on the jet-incoming side was invariably more eroded than the edge on the jet-outgoing side; a rounding up to 3 mm was achieved. For greater rounding, maximum initial gap and maximum initial voltage are recommended. Orig. art. has: 11 figures and 2 formulas.

SUB CODE: 13, 09 / SUBM DATE: none / ORIG REF: 002

Card 2/2

L 38325-66 EWT(m)/EWP(t)/ETI IJP(c) JD/WB SOURCE CODE: UR/0122/66/000/004/0040/0042

ACC NR: AP6012743

58
57
B

AUTHOR: Kargin, G. V. (Engineer)

ORG: none

TITLE: The surface quality of heat-strengthened steels and alloys after electrochemical measured processing

SOURCE: Vestnik mashinostroyeniya, no. 4, 1966, 40-42

TOPIC TAGS: electrochemistry, metal surface, surface scaling, heat resistant steel, heat resistant material

ABSTRACT: The surface quality of heat-strengthened steels and alloys is described with respect to varying electrochemical processing. The following steels and alloys were studied: 4Kh12N8G8MFB (EI481), 33KhN3MA (OKhN3M), KhN77TYuR (EI437B), KhN70VMTYu (EI617), EP57 (EI929B), and EI766. It was found that the increase in current density during processing of all the materials investigated leads to improvement of the surface. The "cleanliness" of the surface during electrochemical measured processing can reach the 9th level (GOST 2789-59). The depth of corrosion depends upon the grade of treated alloy and decreases with increasing current density. For each alloy grade there exists a certain relatively high current density at which corrosion disappears. For alloys KhN77TYuR (EI437B), KhN70VMTYu (EI617), EP57 (EI929B), and EI766 the density is higher than 50--60 a/cm^2; for alloy

UDC: 621.9.047.015:669.14.018.44

Card 1/2

Country : USSR
Category : Farm Animals.
Cattle.
Abs. Jour : Ref Zhur-Biol., No 21, 1958, 96892

Author : Gmyzin, V.; Kargin, I.
Institut. : -
Title : The Fattening of Cattle in Northern Kazakhstan.

Orig Pub. : S. kh. Kazakhstana, 1957, No 10, 18-20

Abstract : No abstract.

Card: 1/1

GRAMM, M.N.; KARGIN, I.Ye.

Strata containing Cytherissa cascusa Mandelstam in litt. in the Karakul' region. Dokl. AN Uz.SSR no.7:15-17 '58. (MIRA 11:10)

1. Institut geologii AN UzSSR i Uzbekskaya gidrogeologicheskaya ekspeditsiya. Predstavleno chelnom-korrespondentom UzSSR N.L. Korzhenevskim.
(Karakul' region--Ostracoda, Fossil)

SAMOYLOVA, V.; KARGIN, L., udarnik kommunisticheskogo truda

Correspondence seminar of trade-union group organizers. Sov. profsoiuzy 18 no.2:18-20 Ja '62. (MIRA 15:4)

1. Professional'nyy organizator grup uchastka pryadil'noy fabriki kommunisticheskogo truda kombinata "Trekhgornaya manufaktura", Moskva (for Samoylova). 2. Professional'nyy organizator grup stolyarno-storochnogo tsekha vagonostroitel'nogo zavoda imeni Yegorova, Leningrad (for Kargin).
(Trade unions)

KARGIN, N.A.

"Children's libraries promote polytechnical education." Collection of articles. Reviewed by N.A. Kargin. Politekh. obuch. no.1:95-96 Ja '57.
(Technical education) (Libraries, Children's)
(MLRA 10:4)

L 39971-66 EWT(d)/EWT(m)/EWP(h)/T-2/EWP(1)

ACC NR: AP6016735 (A) SOURCE CODE: UR/0084/66/000/001/0018/0019

AUTHOR: Kuznetsov, I. (Deputy chief engineer); Kargin, O. (Chief engineer)

ORG: [Kuznetsov] Moscow Administration of Special Aviation Applications and Local Airlines (Moskovskoye upravleniye aviatsii spetsial'nogo primeneniya i mestnykh vozdushnykh liniy); [Kargin] Bykovo Airline Operation-Repair Shops (Bykovskiye lineynyye ekspluatatsionno-remontnyye masterskiye)

TITLE: An-24 aircraft conquers air routes

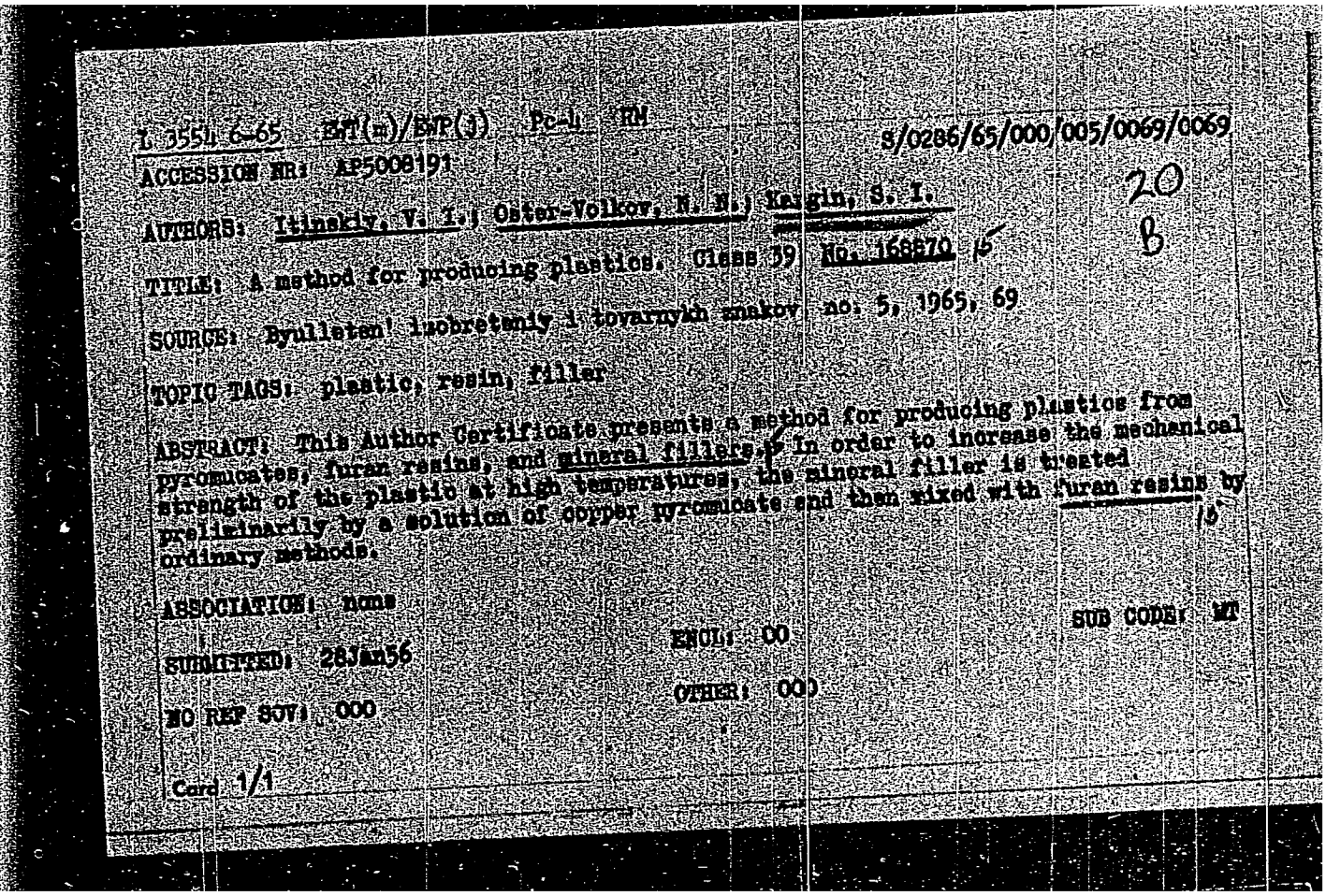
SOURCE: Grazhdanskaya aviatsiya, no. 1, 1966, 18-19

TOPIC TAGS: civil aviation, transport aircraft, turboprop aircraft, turboprop engine / An-24 turboprop aircraft, AI turboprop engine, AV-72 ~~propeller~~ AIRCRAFT PROPELLER

ABSTRACT: A two-year experience with repair and maintenance of An-24 turboprop aircraft is briefly reviewed. The aircraft is widely used on local connection lines of Voronezh, Kursk, Bryansk, Tula, Lipetsk, Ivanov and Tambov. The organization of special training courses for studying the design, operation and repair of An-24 aircraft, AI-turboprop engine and AV-72 propeller is mentioned. A thorough overhaul after 2000 hours of flight is prescribed. All repair works are done in a workshop specially adapted to An-24 aircraft. An ultrasonic method is used for cleaning filters of fuel system. Some engineers and workers are mentioned and their work is praised. Orig. art. has: 2 photos.

SUB CODE: 01/ SUBM DATE: None

Card 1/1



L 3554 6-65 EWT(m)/EWP(j) Pc-4 RM

ACCESSION NR: AP5008191 S/0286/65/000/005/0069/0069

AUTHORS: Itinskiy, V. I.; Oster-Volkov, N. N.; Kargin, S. I. 20 8

TITLE: A method for producing plastics. Class 39 No. 168870

SOURCE: Byulleten' izobreteniy i tovarnykh znakov no. 5, 1965, 69

TOPIC TAGS: plastic, resin, filler

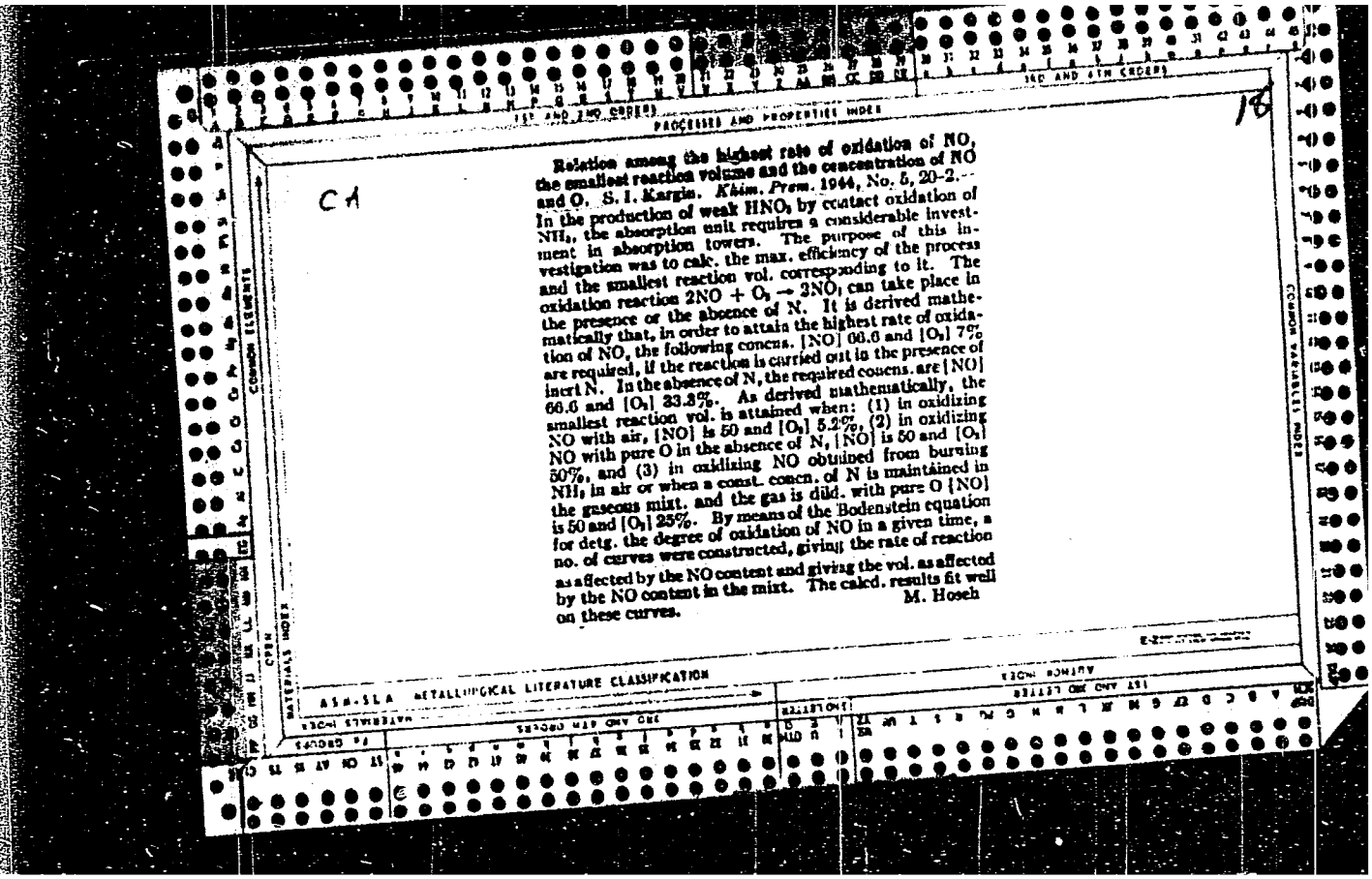
ABSTRACT: This Author Certificate presents a method for producing plastics from pyromucates, furan resins, and mineral fillers. In order to increase the mechanical strength of the plastic at high temperatures, the mineral filler is treated preliminarily by a solution of copper pyromucate and then mixed with furan resins by ordinary methods.

ASSOCIATION: none

SUBMITTED: 28Jan56 ENCL: 00 SUB CODE: MT

NO REF SOV: 000 OTHER: 000

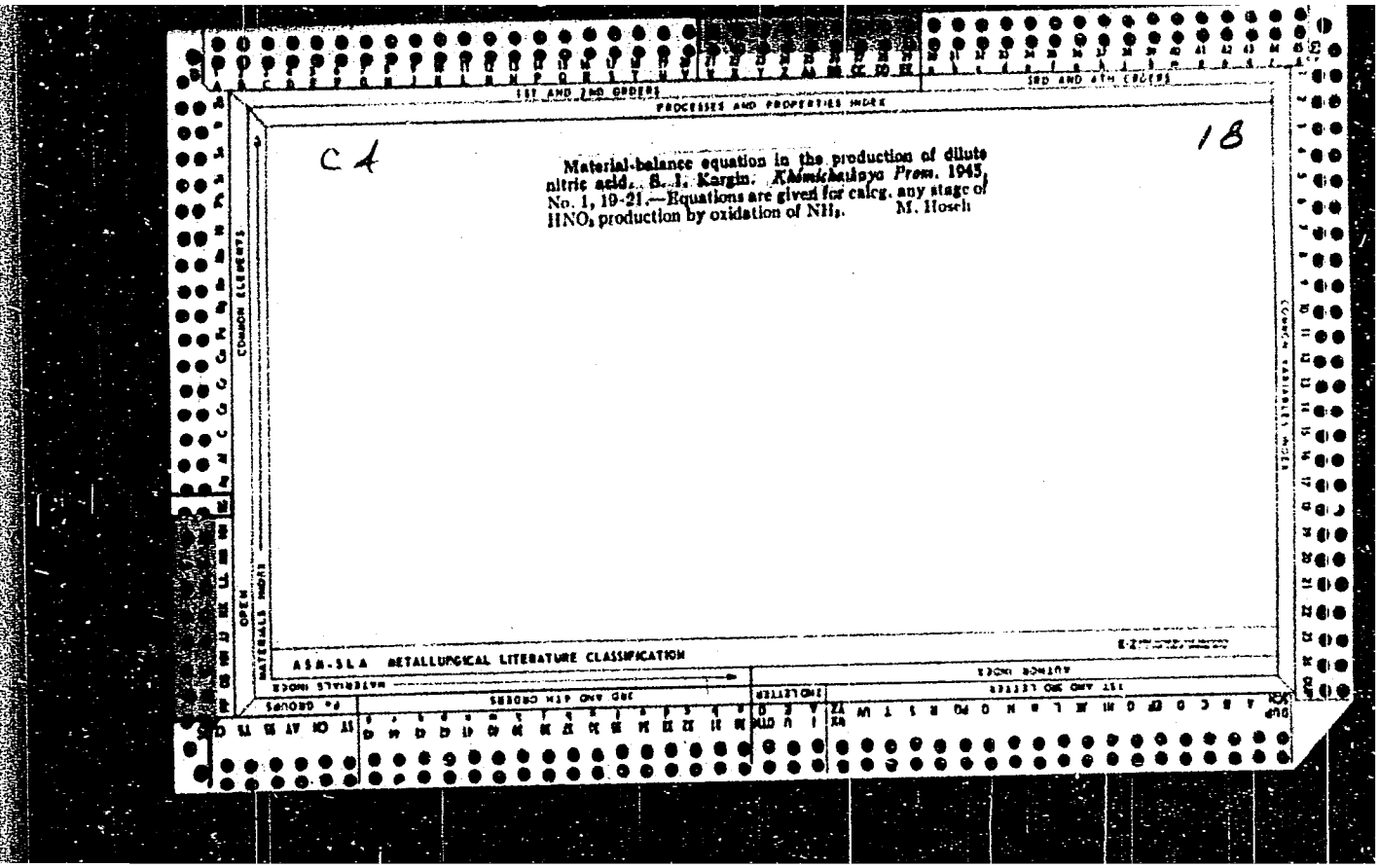
Card 1/1



C1

Relation among the highest rate of oxidation of NO, the smallest reaction volume and the concentration of NO and O. S. I. Kargin. *Khim. Prom.* 1944, No. 5, 20–2.—In the production of weak HNO_3 by contact oxidation of NH_3, the absorption unit requires a considerable investment in absorption towers. The purpose of this investigation was to calc. the max. efficiency of the process and the smallest reaction vol. corresponding to it. The oxidation reaction $2NO + O_2 \rightarrow 2NO_2$ can take place in the presence or the absence of N. It is derived mathematically that, in order to attain the highest rate of oxidation of NO, the following concns. [NO] 66.6 and [O_2] 7% are required, if the reaction is carried out in the presence of inert N. In the absence of N, the required concns. are [NO] 66.6 and [O_2] 33.3%. As derived mathematically, the smallest reaction vol. is attained when: (1) in oxidizing NO with air, [NO] is 50 and [O_2] 5.2%, (2) in oxidizing NO with pure O in the absence of N, [NO] is 50 and [O_2] 50%, and (3) in oxidizing NO obtained from burning NH_3 in air or when a const. concn. of N is maintained in the gaseous mixt. and the gas is dild. with pure O [NO] is 50 and [O_2] 25%. By means of the Bodenstein equation for detg. the degree of oxidation of NO in a given time, a no. of curves were constructed, giving the rate of reaction as affected by the NO content and giving the vol. as affected by the NO content in the mixt. The calcd. results fit well on these curves.

M. Hoseh



C 1

18

Material-balance equation in the production of dilute nitric acid. S. I. Kargin. *Khimicheskaya Prom.* 1945, No. 1, 19-21.—Equations are given for calcg. any stage of HNO_3 production by oxidation of NH_3. M. Hosch

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

KARGIN, S. I.

Jan 1947

USSR/Chemistry - Nitric Acid
Chemistry - Absorption

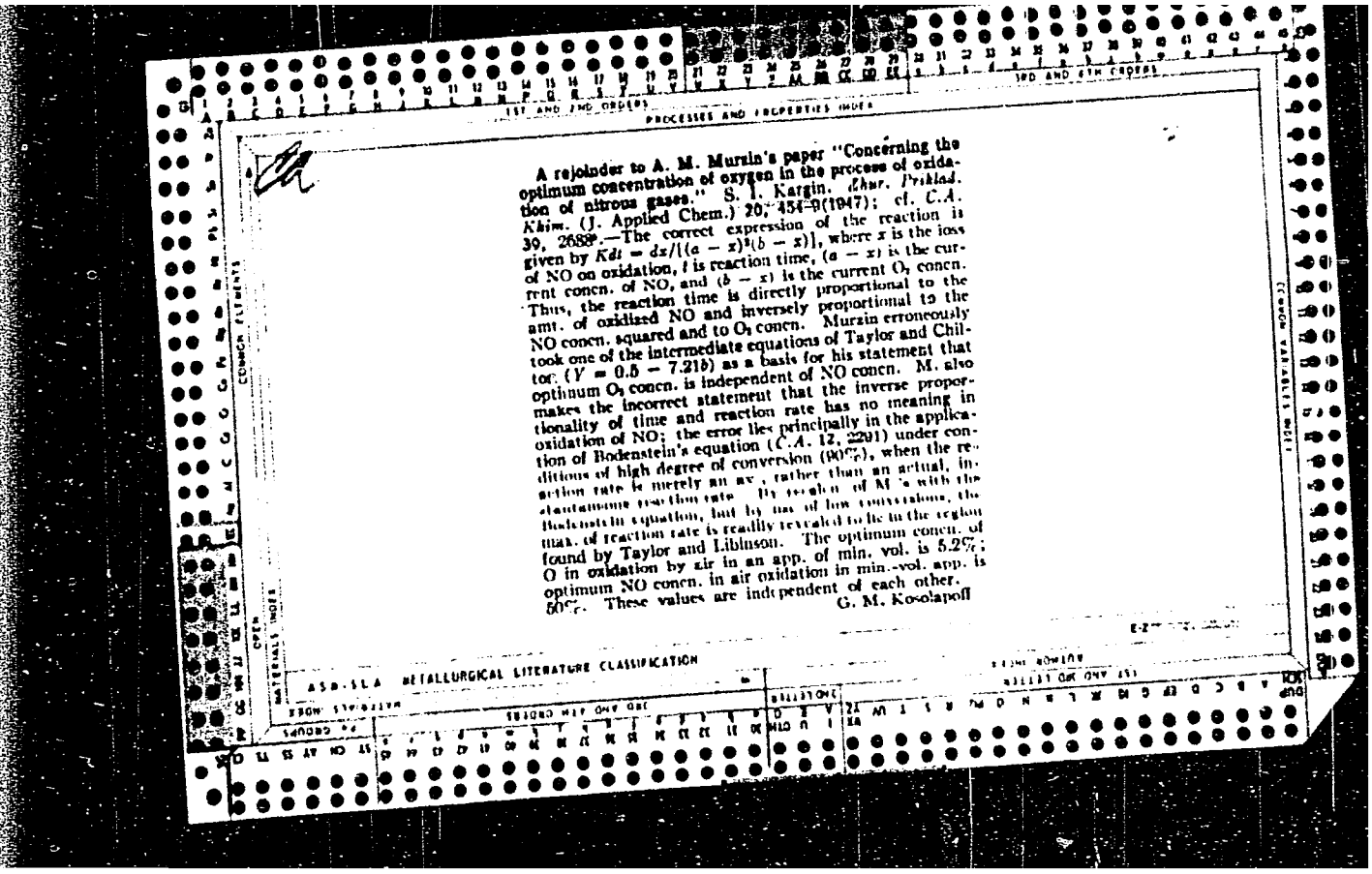
"'Full Oxidization of the Absorption System in the Production of Nitric Acids' by D. A. Chernobayev," S. I. Kargin, Senior Engr, GIAP, 2 pp

State Inst. Nitrogen Industry.

"Khimicheskaya Promyshlennost'" No 1, p. 31-32

A brief comment on an article in "Zhurnal Khimicheskoy Promyshlennosti" No 23, 1937. Kargin contends that Chernobayev took an erroneous view of the whole subject, and points out the various differences of opinion between the statements made by Chernobayev and existing facts.

IA 29T15



A rejoinder to A. M. Murzin's paper "Concerning the optimum concentration of oxygen in the process of oxidation of nitrous gases." S. I. Kargin. *Zhur. Prikład. Khim.* (J. Applied Chem.) 20, 454–9(1947); cf. *C.A.* 39, 2688.—The correct expression of the reaction is given by $Kdt = dx/[(a - x)^2(b - x)]$, where x is the loss of NO on oxidation, t is reaction time, $(a - x)$ is the current NO concn., and $(b - x)$ is the current O_2 concn. Thus, the reaction time is directly proportional to the amt. of oxidized NO and inversely proportional to the NO concn. squared and to O_2 concn. Murzin erroneously took one of the intermediate equations of Taylor and Chilton ($Y = 0.5 - 7.21b$) as a basis for his statement that optimum O_2 concn. is independent of NO concn. M. also makes the incorrect statement that the inverse proportionality of time and reaction rate has no meaning in oxidation of NO; the error lies principally in the application of Bodenstein's equation (*C.A.* 12, 2291) under conditions of high degree of conversion (90%), when the reaction rate is merely an av., rather than an actual, instantaneous reaction rate. By reason of M.'s with the Bodenstein equation, but by use of low concentrations, the max. of reaction rate is readily revealed to lie in the region found by Taylor and Liblinson. The optimum concn. of O in oxidation by air in an app. of min. vol. is 5.2%; optimum NO concn. in air oxidation in min.-vol. app. is 50%. These values are independent of each other.

G. M. Kosolapoff

KARGIN, S. I.
PHASE X

TREASURE ISLAND BIBLIOGRAPHICAL REPORT

AID 667 - X

Call No.: AF 399779

BOOK
Author: ATROSHCHENKO, V. I. and KARGIN, S. I.
Full Title: TECHNOLOGY OF NITRIC ACID
Transliterated Title: Tekhnologiya azotnoy kisloty
PUBLISHING DATA
Originating Agency: None
Publishing House: State Scientific and Technical Publishing House of Chemical Literature
Date: 1949 No. pp.: 376 No. of copies: 5,000
Editorial Staff: None
PURPOSE AND EVALUATION: The book is intended to serve as a textbook for students of technology. It may also serve as a manual for technical personnel employed in the chemical industry. Since Allin Cottrell's book Manufacture of Nitric Acid and Nitrates was published in London in 1932 (2nd edition), no monograph on the manufacture of nitric acid has been published in English. Thus this book should be of great value to chemists actively engaged in the production of nitric acid. The book as a whole is clearly written. The text is well illustrated with diagrams, tables, and formulas.
TEXT DATA
Coverage: The calculations concerned with the manufacture of concentrated nitric

KARGIN, S. I.

"A Method for the Production of Liquid Nitrogen Oxides From Nitrous Gases," by S. I. Kargin (Authorship Certificate No 105415 of 25 Apr 1957, Class 12 i, 26, Application No 311941/-9342 filed on 27 November 1942 at the People's Commissariat of Chemical Industry), Byulleten' Izobreteniy, No 2, Apr 57, p 12

A method of producing liquid nitrogen oxides from nitrous gases is described whereby these gases are oxidized by the oxygen of the air under pressure and then absorbed by a cooled solvent in absorption towers. A distinguishing characteristic of the method is that nitrogen dioxide is absorbed in towers by concentrated nitric acid, which must have a concentration of at least 80%, at a low temperature and a pressure no lower than 6 atmospheres. The nitrogen dioxide is then separated from the nitric acid by heating and condensed by cooling at atmospheric pressure. (U)

KARGIN, S. I.

AUTHORS: Mel'nikov, Ye. Ya., Engineer, 67-1-1/20
Kargin, S. I., Engineer

TITLE: Application of Oxygen in Nitrogen Industry
(Primeneniye kisloroda v azotnoy promyshlennosti)

PERIODICAL: Kislorod, 1958, V. 11, Nr 1, pp. 1-15 (USSR)

ABSTRACT: Oxygen which was produced in Soviet Nitrogen Industry only as waste product in nitrogen industry until 1942 and which in general was used only little has been utilized more intensively only since 1942. Since 1944 oxygen was used in the first gas producer station constructed in the USSR with which the current coking was made for ammonia products. Since this time the application of oxygen steadily increased in Soviet industry. In 1945 it had increased by the 3,5 fold and in 1956 by the 5,7 fold as compared to 1945. Especially the recent discoveries of rich petroleum and natural gas sources have contributed towards this increase. In this connection the Soviet ammonia production from natural gas was started with the use of oxygen. The Soviet planning aims at the use of oxygen in the case of 45 % of the total production

Card 1/4

of ammonia by 1960 (instead of the hitherto 15 %). Moreover, oxygen is used now also to an increasing extent for the production of weak nitric acid, methyl- and isobutyl alcohol, as well as of acetylene (by means of oxygen pyrolysis). In the chapter: coking of brown coal in the gas generator "ГИАП" a plant is described which is now widely used in the USSR and also in the other socialist countries. The main principle of this plant consists in the moist oxygen blast with an intensity of 1500-4500 nm^3 per m^3 of the coke furnace. In the chapter: continuous coking, a new plant is described which is used for steam operated air oxygen blasts in ammonia production of for steam operated oxygen blasts in the production of synthetic alcohols. In the chapter: peat coking, it is said that in the USSR(disposing of move than 60 % of the world's stock of peat) this fuel is used as raw material for nitrogen industry especially in those areas where other fuel lacks. The above described "ГИАП " plant is used for the coking of peat which had been dried before to 10-15 % of moisture content. In the chapter: catalytic steam operated oxygen - conversion of hydrocarbon gases, a process is described which consists of the catalytic

oxidation of methane or its homologs by means of oxygen until the oxidation of carbon or hydrogen. This process is now introduced in the USSR to an increasing extent and many new industrial plants based on this process are constructed. In the chapter: high temperature conversion of hydrocarbon gases, the process of a non catalytic incomplete oxidation of methane or its homologs by means of oxygen at high temperatures is decribed. The described plan operates at a temperature of 1450°. A similar process, however, under the use of pressure was introduced for the first time in Soviet industry. In the chapter: incomplete oxidation of mazut or petroleum by non catalytical means, a process is described by means of which gases are produced which are used for the synthesis of ammonia, alcohols and for the production of hydrogen. In the chapter: oxidation of higher hydrocarbons in petroleum gases at low temperatures a method is described which is used for the practical explicitation of these gases which in this connection are used as raw material for the production of synthetic ammonia, spirits and aldehydes. The scheme of production is given. In the chapter: production of acetylene from natural gas, the production

Application of Oxygen in Nitrogen Industry 67-1-1/20

by means of thermo oxidation pyrolysis of natural methane by means of oxygen is described. This production method will play an important role in Soviet chemical industry in the near future. The plant used for this purpose is described. In the chapter: the application of oxygen in nitrogen production, 2 processes are described:

1) oxidation of NH_3 to NO and water, and
2) oxidation of NO to NO_2 the reation of which water, produces nitric acid. The plant used for this method is equally described.

There are 8 figures, 13 tables, and 19 references, 16 of which are Slavic

AVAILABLE: Library of Congress

1. Industry-USSR 2. Oxygen-Production

Card 4/4

5(1)

AUTHOR: Kargin, S. I.

06220
SOV/64-59-6-12/28

TITLE: Some Equations for Calculating the Production of Concentrated Nitric Acid by Direct Synthesis

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 6, pp 503 - 507 (USSR)

ABSTRACT: In the production of concentrated nitric acid in a plant the amount of one of the reaction components has often to be established in one of the stages of the process. Since the establishment of a material balance is rather complicated in such a case, appropriate equations are derived here which allow a simple calculation of the changes of one quantity in dependence on another. The technological process of nitric acid production may be divided into 5 main stages: 1) Oxidation of NO by atmospheric oxygen, 2) separation of the superfluous H_2O from nitrose gases, 3) final oxidation of NO with concentrated HNO_3, 4) processing of nitrogen oxides into the acid in the autoclave, and 5) decoloration of concentrated nitric

Card 1/2

Some Equations for Calculating the Production of Concentrated Nitric Acid by Direct Synthesis

06220
SOV/64-59-6-12/28

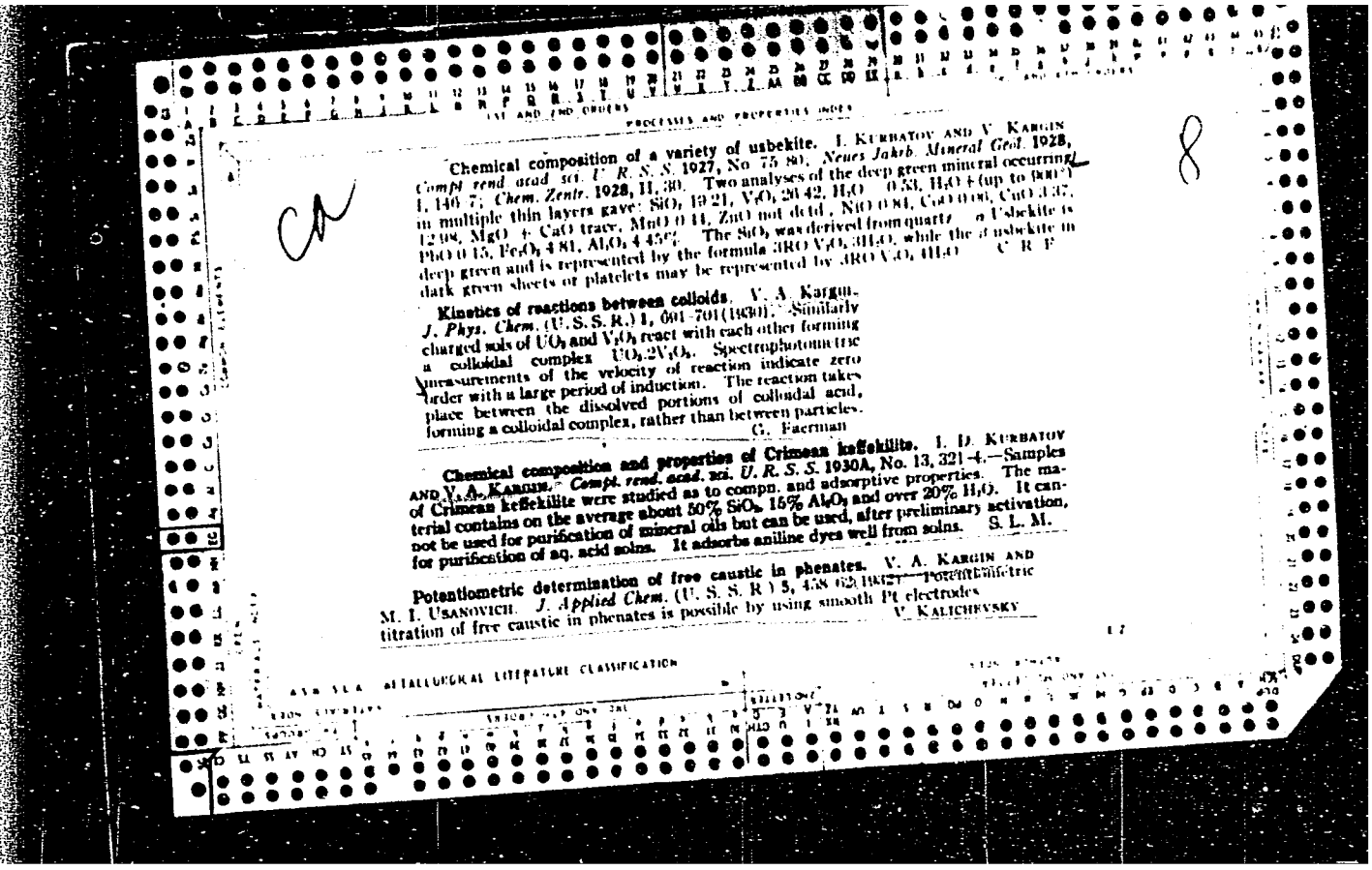
acid. For these 5 stages the said equations are derived in 5 respective parts, and (with the final equations) a total of 62 equations is given.

Card 2/2

ATROSHCHENKO, Vasiliy Ivanovich; KARGIN, Stepan Ivanovich; CHULKOVA, I.S., red. ZAZUL'SKAYA, V.F., tekhn. red.

[Technology of nitric acid] Tekhnologiia azotnoi kisloty. Moskva, Gos. nauchno-tekhn. izd-vo khim. lit-ry, 1962. 523 p. (MIRA 15:3)

(Nitric acid)

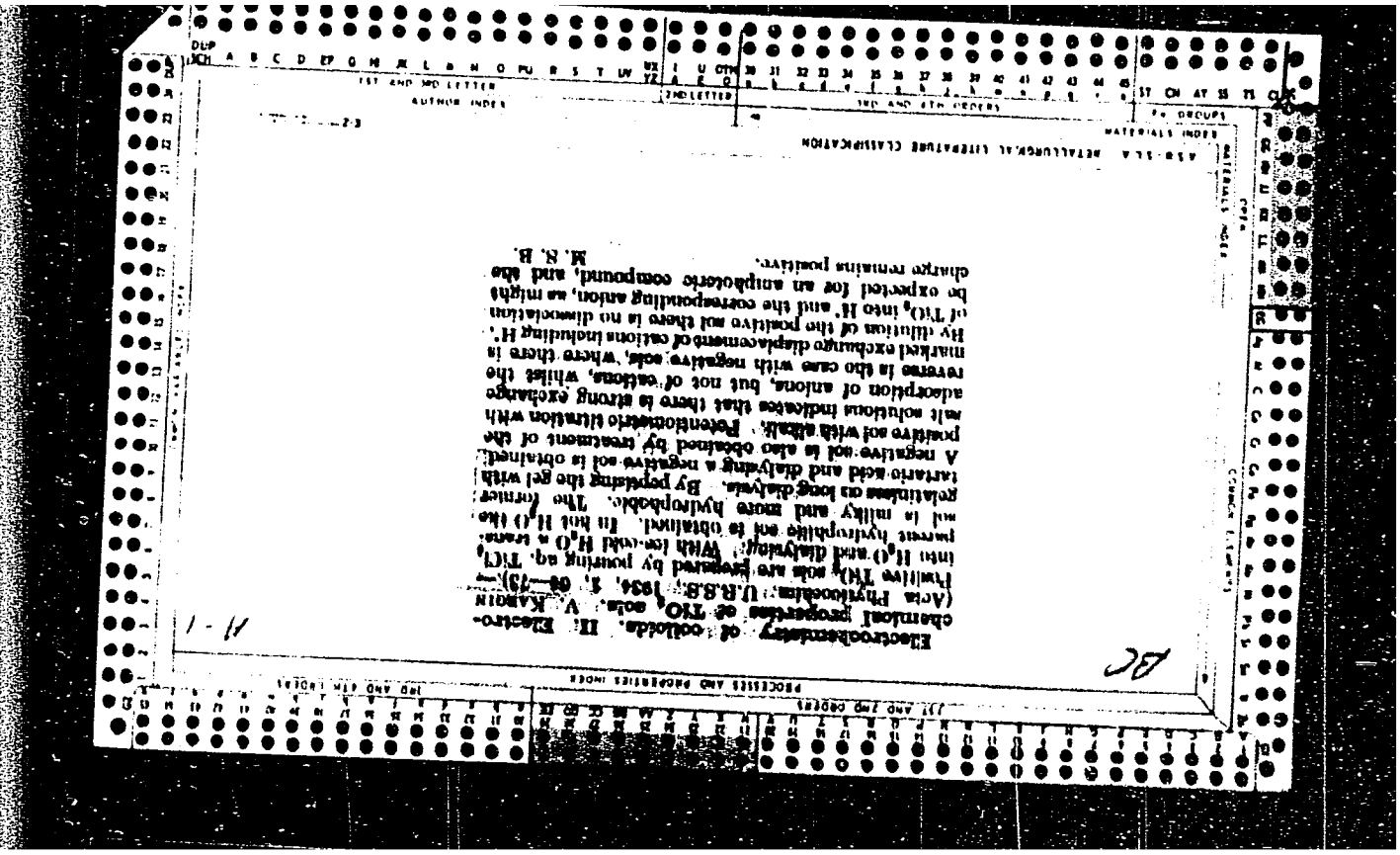


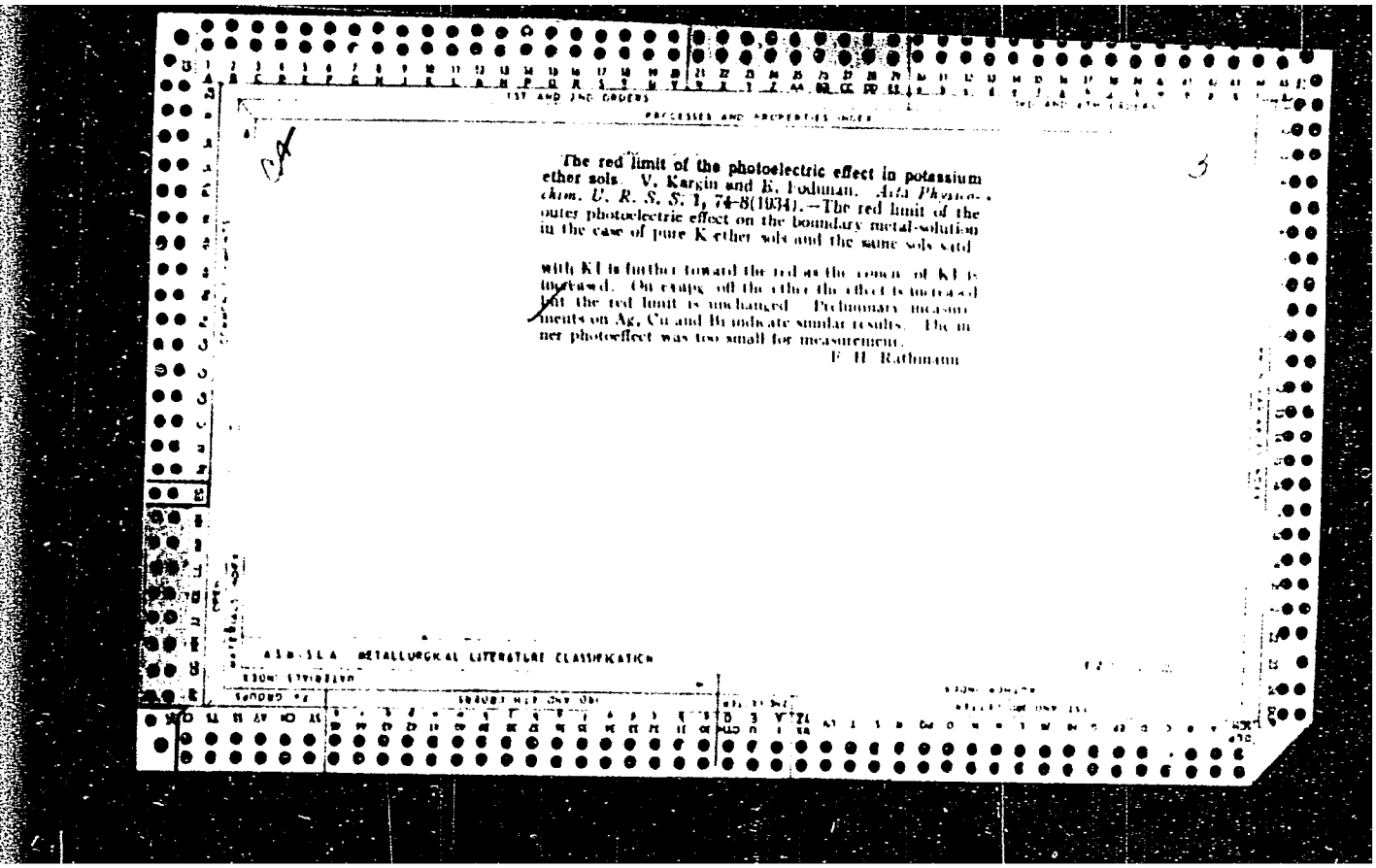
Chemical composition of a variety of usbekite. I. KURBATOV AND V. KARGIN *Compt. rend. acad. sci. U. R. S. S.* 1927, No 75-80; *Neues Jahrb. Mineral Geol.* 1928, I, 146-7; *Chem. Zentr.* 1928, II, 30. Two analyses of the deep green mineral occurring in multiple thin layers gave: SiO_2 19.21, V_2O_5 20.42, H_2O^- 0.53, H_2O+ (up to 900°) 12.98, MgO + CaO trace, MnO 0.44, ZnO not detd., NiO 0.81, CoO 0.06, CuO 1.37, PbO 0.15, Fe_2O_3 4.81, Al_2O_3 4.45%. The SiO_2 was derived from quartz. Usbekite is deep green and is represented by the formula $3RO.V_2O_5.3H_2O$, while the usbekite in dark green sheets or platelets may be represented by $3RO.V_2O_5.4H_2O$. C. R. F.

Kinetics of reactions between colloids. V. A. Kargin. *J. Phys. Chem.* (U. S. S. R.) 1, 691–701 (1930). Similarly charged sols of UO_3 and V_2O_5 react with each other forming a colloidal complex $UO_3.2V_2O_5$. Spectrophotometric measurements of the velocity of reaction indicate zero order with a large period of induction. The reaction takes place between the dissolved portions of colloidal acid, forming a colloidal complex, rather than between particles. G. Faerman

Chemical composition and properties of Crimean keffekilite. I. D. KURBATOV AND V. A. KARGIN. *Compt. rend. acad. sci. U. R. S. S.* 1930A, No. 13, 321–4.—Samples of Crimean keffekilite were studied as to compn. and adsorptive properties. The material contains on the average about 50% SiO_2, 15% Al_2O_3 and over 20% H_2O. It cannot be used for purification of mineral oils but can be used, after preliminary activation, for purification of aq. acid solns. It adsorbs aniline dyes well from solns. S. L. M.

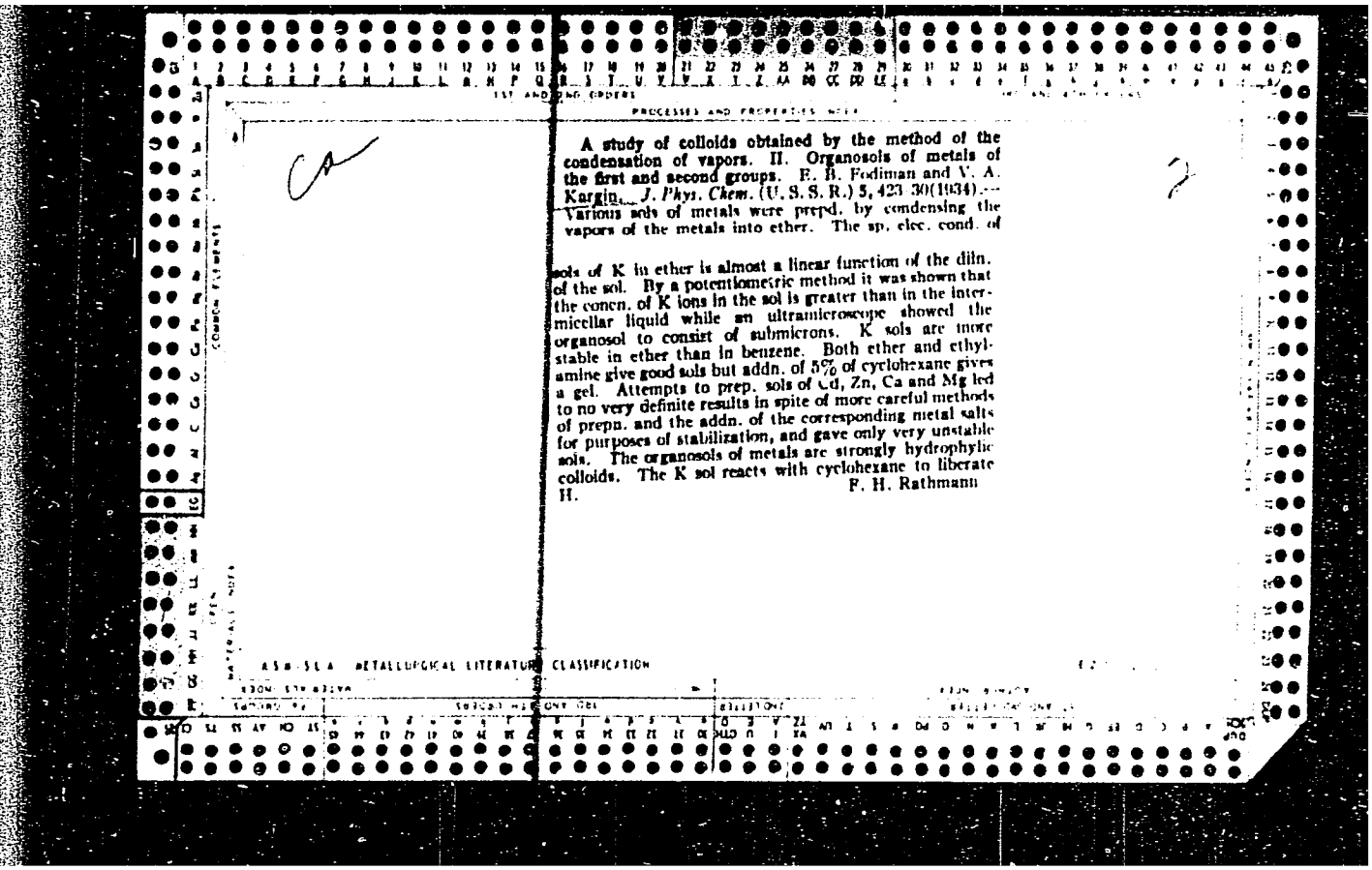
Potentiometric determination of free caustic in phenates. V. A. KARGIN AND M. I. USANOVICH. *J. Applied Chem.* (U. S. S. R.) 5, 458–62 (1932).—Potentiometric titration of free caustic in phenates is possible by using smooth Pt electrodes V. KALICHEVSKY





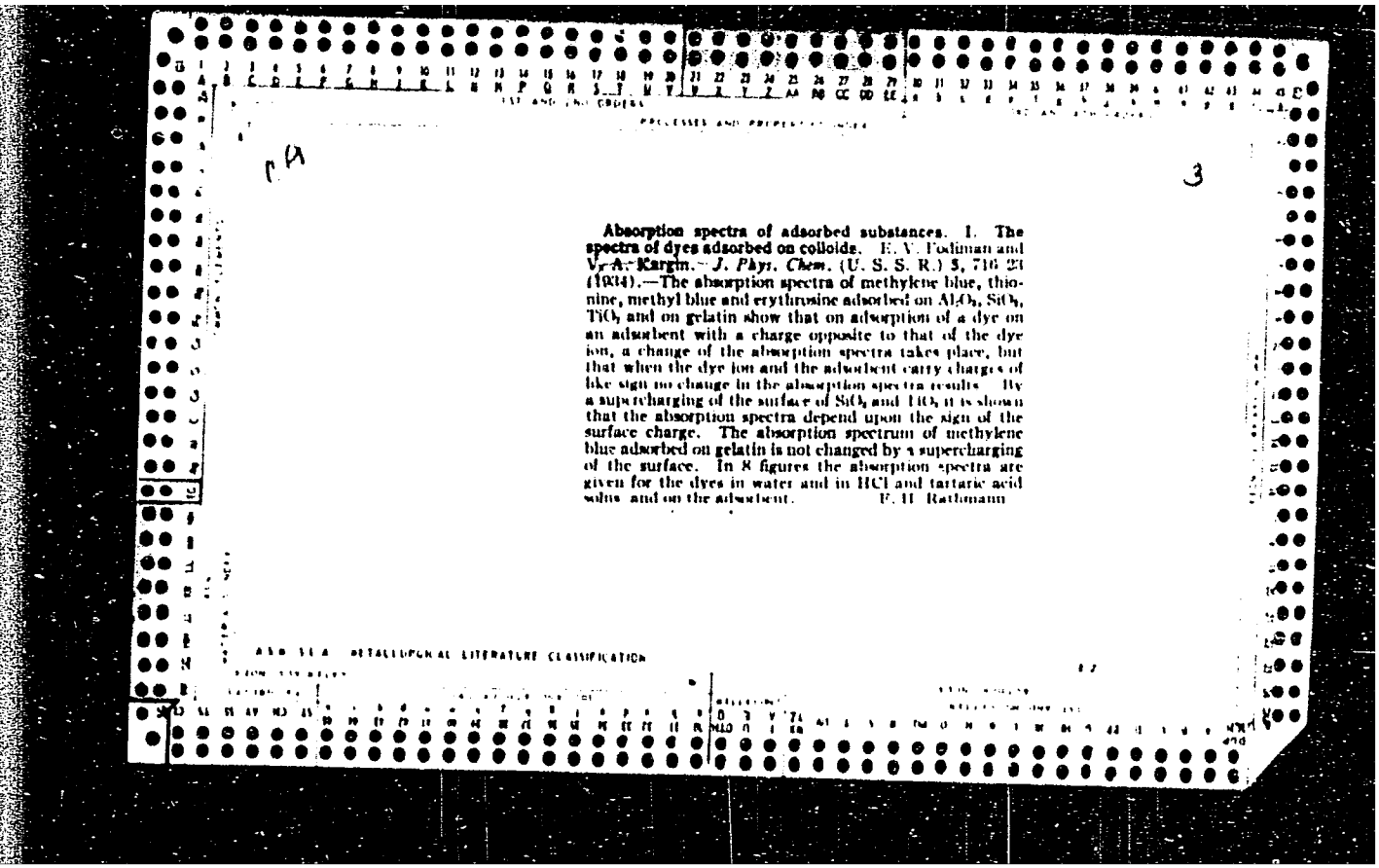
The red limit of the photoelectric effect in potassium ether sols. V. Kargin and B. Podunan. *Acta Physicochim. U. R. S. S.* 1, 74–8(1934).—The red limit of the outer photoelectric effect on the boundary metal-solution in the case of pure K ether sols and the same sols sated with KI is further toward the red as the concn. of KI is increased. On coagn. of the ether the effect is increased but the red limit is unchanged. Preliminary measurements on Ag, Cu and Br indicate similar results. The inner photoeffect was too small for measurement.

F. H. Rathmann

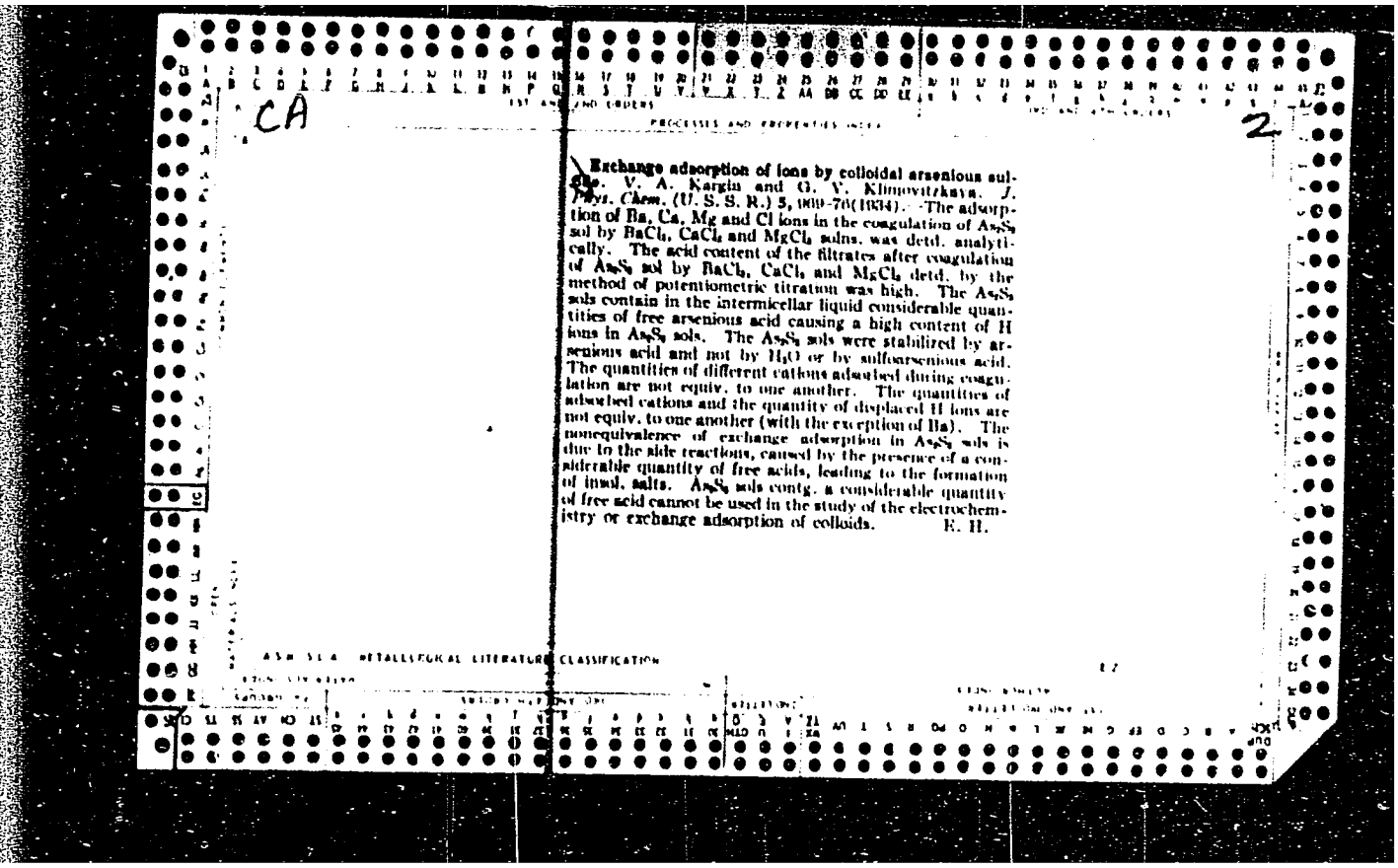


A study of colloids obtained by the method of the condensation of vapors. II. Organosols of metals of the first and second groups. E. B. Fodiman and V. A. Kargin. *J. Phys. Chem.* (U. S. S. R.) 5, 423-30(1934).—Various sols of metals were prepd. by condensing the vapors of the metals into ether. The sp. elec. cond. of sols of K in ether is almost a linear function of the diln. of the sol. By a potentiometric method it was shown that the concn. of K ions in the sol is greater than in the intermicellar liquid while an ultramicroscope showed the organosol to consist of submicrons. K sols are more stable in ether than in benzene. Both ether and ethylamine give good sols but addn. of 5% of cyclohexane gives a gel. Attempts to prep. sols of Cd, Zn, Ca and Mg led to no very definite results in spite of more careful methods of prepn. and the addn. of the corresponding metal salts for purposes of stabilization, and gave only very unstable sols. The organosols of metals are strongly hydrophylic colloids. The K sol reacts with cyclohexane to liberate H.

F. H. Rathmann



Absorption spectra of adsorbed substances. I. **The spectra of dyes adsorbed on colloids.** E. V. Fotiman and V. A. Kargin. — *J. Phys. Chem.* (U. S. S. R.) 5, 716-21 (1934).—The absorption spectra of methylene blue, thionine, methyl blue and erythrosine adsorbed on Al_2O_3, SiO_2, TiO_2 and on gelatin show that on adsorption of a dye on an adsorbent with a charge opposite to that of the dye ion, a change of the absorption spectra takes place, but that when the dye ion and the adsorbent carry charges of like sign no change in the absorption spectra results. By a supercharging of the surface of SiO_2 and TiO_2 it is shown that the absorption spectra depend upon the sign of the surface charge. The absorption spectrum of methylene blue adsorbed on gelatin is not changed by a supercharging of the surface. In 8 figures the absorption spectra are given for the dyes in water and in HCl and tartaric acid soln. and on the adsorbent. P. H. Rathmann

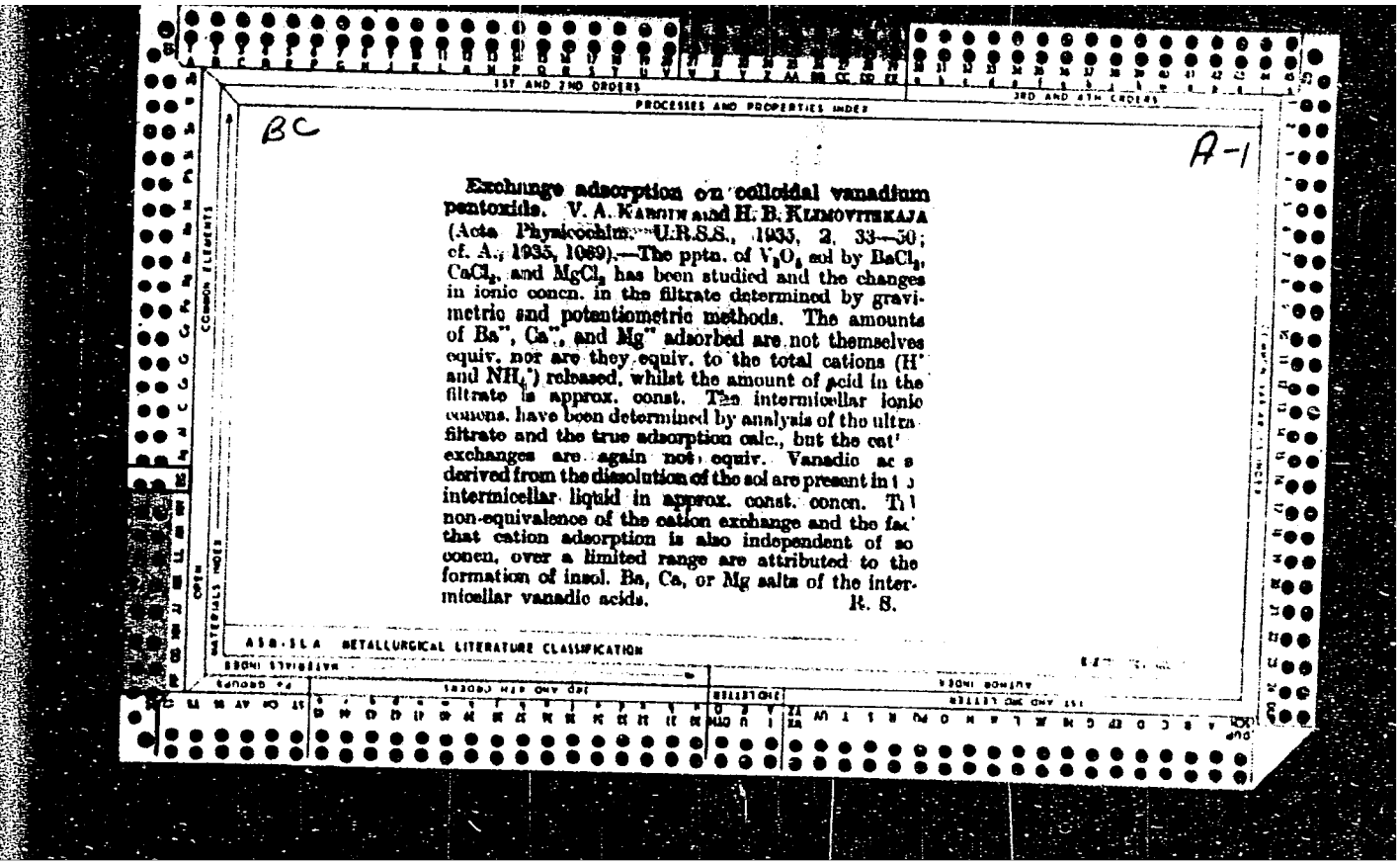


CA

2

Exchange adsorption of ions by colloidal arsenious sulfide. V. A. Kargin and G. V. Klimovitzkaya. *J. Phys. Chem.* (U. S. S. R.) 5, 969-76(1934). The adsorption of Ba, Ca, Mg and Cl ions in the coagulation of As_2S_3 sol by $BaCl_2$, $CaCl_2$ and $MgCl_2$ solns. was detd. analytically. The acid content of the filtrates after coagulation of As_2S_3 sol by $BaCl_2$, $CaCl_2$ and $MgCl_2$ detd. by the method of potentiometric titration was high. The As_2S_3 sols contain in the intermicellar liquid considerable quantities of free arsenious acid causing a high content of H ions in As_2S_3 sols. The As_2S_3 sols were stabilized by arsenious acid and not by H_2O or by sulfoarsenious acid. The quantities of different cations adsorbed during coagulation are not equiv. to one another. The quantities of adsorbed cations and the quantity of displaced H ions are not equiv. to one another (with the exception of Ba). The nonequivalence of exchange adsorption in As_2S_3 sols is due to the side reactions, caused by the presence of a considerable quantity of free acids, leading to the formation of insol. salts. As_2S_3 sols contg. a considerable quantity of free acid cannot be used in the study of the electrochemistry or exchange adsorption of colloids. E. H.

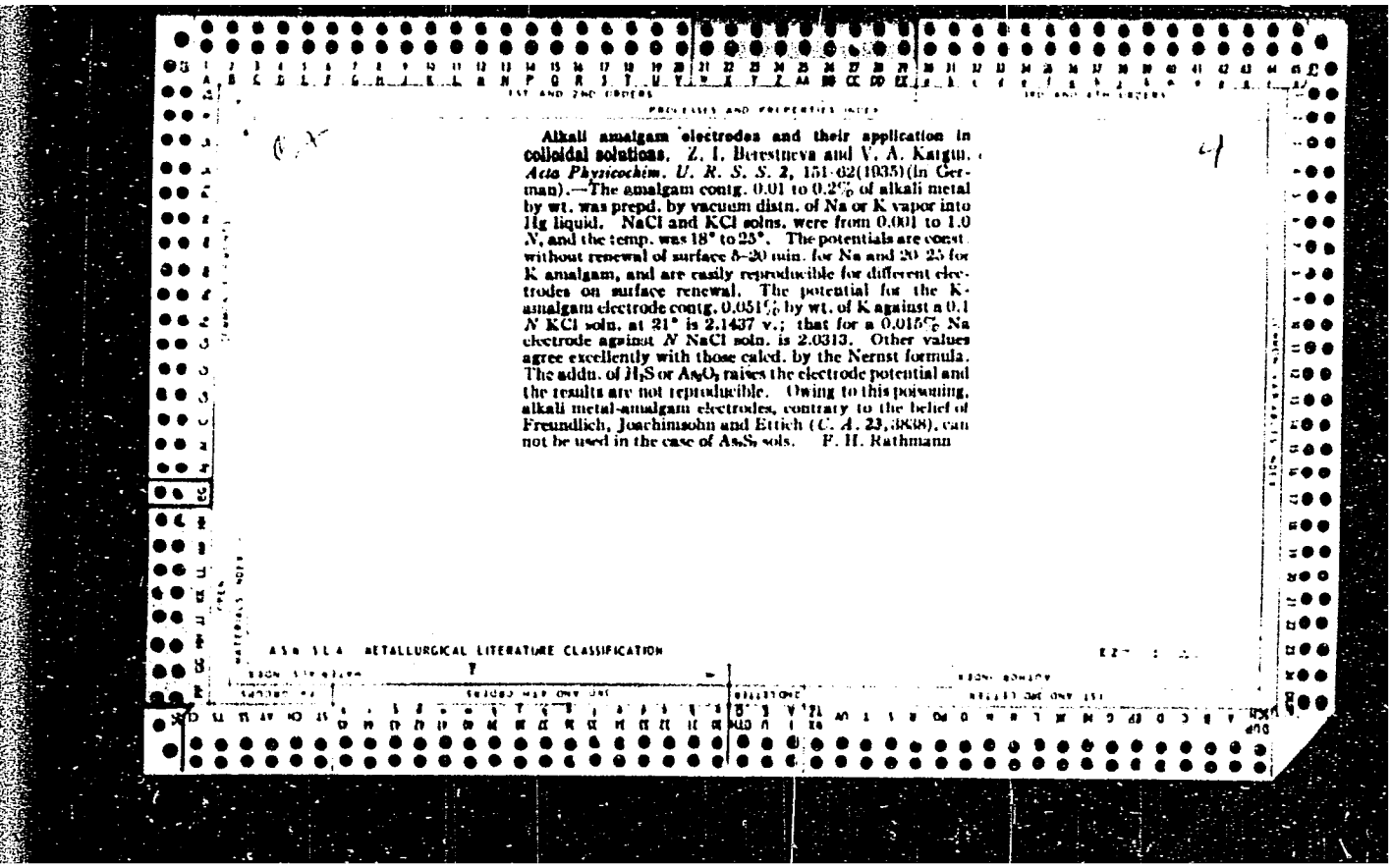
ASM SLA METALLURGICAL LITERATURE CLASSIFICATION



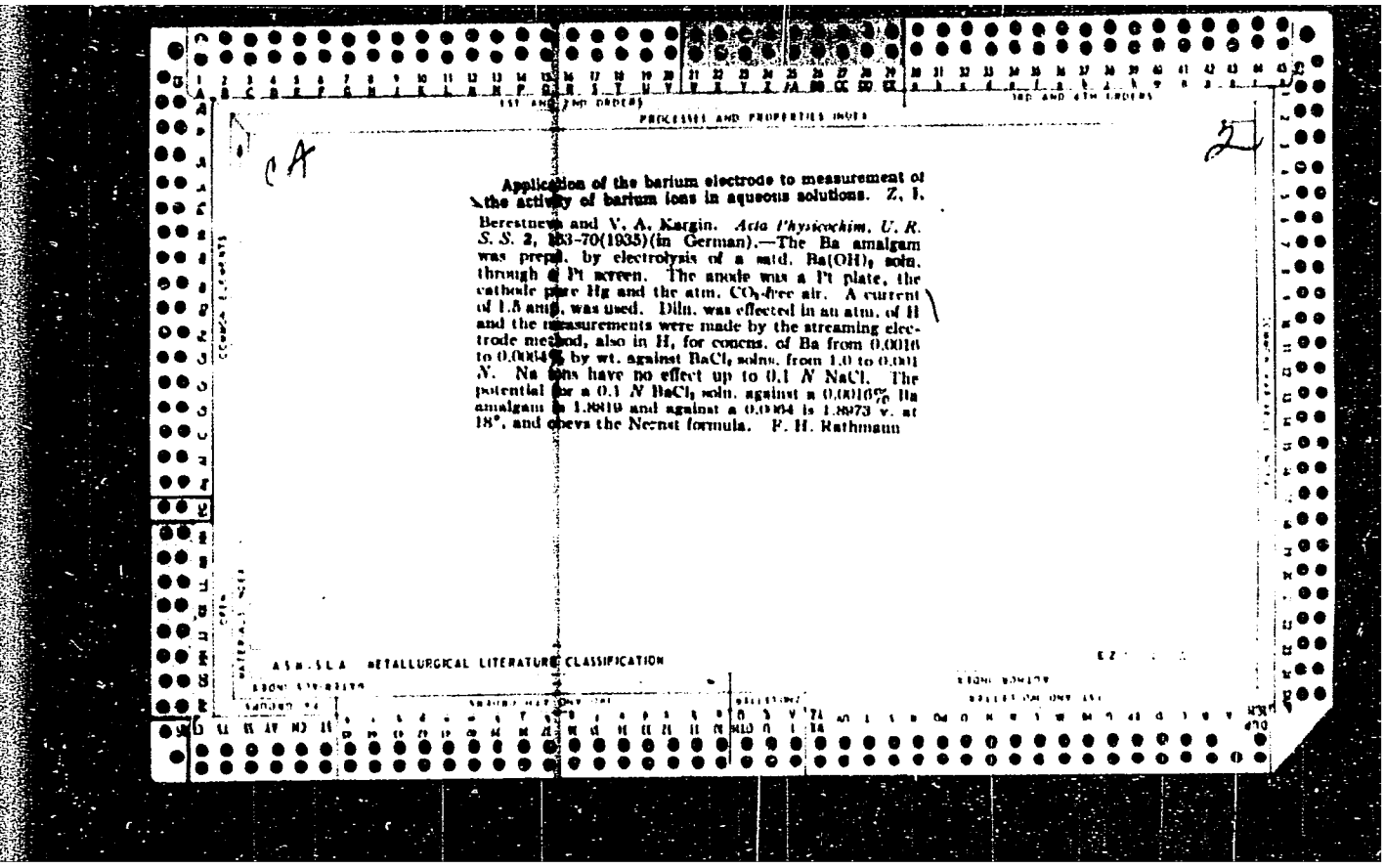
BC

A-1

Exchange adsorption on colloidal vanadium pentoxide. V. A. KARGIN and H. B. KLIMOVITSKAJA (Acta Physicochim. U.R.S.S., 1935, 2, 33—50; cf. A., 1935, 1069).—The ppte. of V_2O_5 sol by $BaCl_2$, $CaCl_2$, and $MgCl_2$ has been studied and the changes in ionic concn. in the filtrate determined by gravimetric and potentiometric methods. The amounts of $Ba^{"}$, $Ca^{"}$, and $Mg^{"}$ adsorbed are not themselves equiv. nor are they equiv. to the total cations ($H^{'}$ and $NH_4^{'}$) released, whilst the amount of acid in the filtrate is approx. const. The intermicellar ionic concns. have been determined by analysis of the ultra-filtrate and the true adsorption calc., but the cat' exchanges are again not equiv. Vanadic ac s derived from the dissolution of the sol are present in t intermicellar liquid in approx. const. concn. Th non-equivalence of the cation exchange and the fac that cation adsorption is also independent of so concn. over a limited range are attributed to the formation of insol. Ba, Ca, or Mg salts of the intermicellar vanadic acids. R. S.



Alkali amalgam electrodes and their application in colloidal solutions. Z. I. Berestneva and V. A. Kargin. *Acta Physicochim. U. R. S. S.* **2**, 151-62(1935)(In German).—The amalgam contg. 0.01 to 0.2% of alkali metal by wt. was prepd. by vacuum distn. of Na or K vapor into Hg liquid. NaCl and KCl solns. were from 0.001 to 1.0 *N*, and the temp. was 18° to 25°. The potentials are const without renewal of surface 5–20 min. for Na and 20–25 for K amalgam, and are easily reproducible for different electrodes on surface renewal. The potential for the K-amalgam electrode contg. 0.051% by wt. of K against a 0.1 *N* KCl soln. at 21° is 2.1437 v.; that for a 0.015% Na electrode against *N* NaCl soln. is 2.0313. Other values agree excellently with those calcd. by the Nernst formula. The addn. of H_2S or As_2O_3 raises the electrode potential and the results are not reproducible. Owing to this poisoning, alkali metal-amalgam electrodes, contrary to the belief of Freundlich, Joachimsohn and Ettisch (*C. A.* **23**, 3838), can not be used in the case of As_2S_3 sols. F. H. Rathmann



Application of the barium electrode to measurement of the activity of barium ions in aqueous solutions. Z. I. Berestneva and V. A. Kargin. *Acta Physicochim. U. R. S. S.* 2, 783-70(1935)(in German).—The Ba amalgam was prepd. by electrolysis of a satd. $Ba(OH)_2$ soln. through a Pt screen. The anode was a Pt plate, the cathode pure Hg and the atm. CO_2-free air. A current of 1.5 amp. was used. Dilu. was effected in an atm. of H and the measurements were made by the streaming electrode method, also in H, for concns. of Ba from 0.0016 to 0.00044% by wt. against $BaCl_2$ solns. from 1.0 to 0.001 *N*. Na ions have no effect up to 0.1 *N* NaCl. The potential for a 0.1 *N* $BaCl_2$ soln. against a 0.0016% Ba amalgam is 1.8819 and against a 0.0004 is 1.8973 v. at 18°, and obeys the Nernst formula. F. H. Rathmann

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A-1

[illegible] V. A. Kargin and S. Papkov (Acta Physicochim. U.R.S.S., [illegible]).—The amount of heat evolved on mixing [illegible] with various light petroleum (I)-$COMe_2$ and (I)-C_5H_5N solutions has been determined calorimetrically. Approx. 1 mol. of $COMe_2$ or C_5H_5N is bound chemically per NO_3 group. The interaction between the solvated particles is very small.

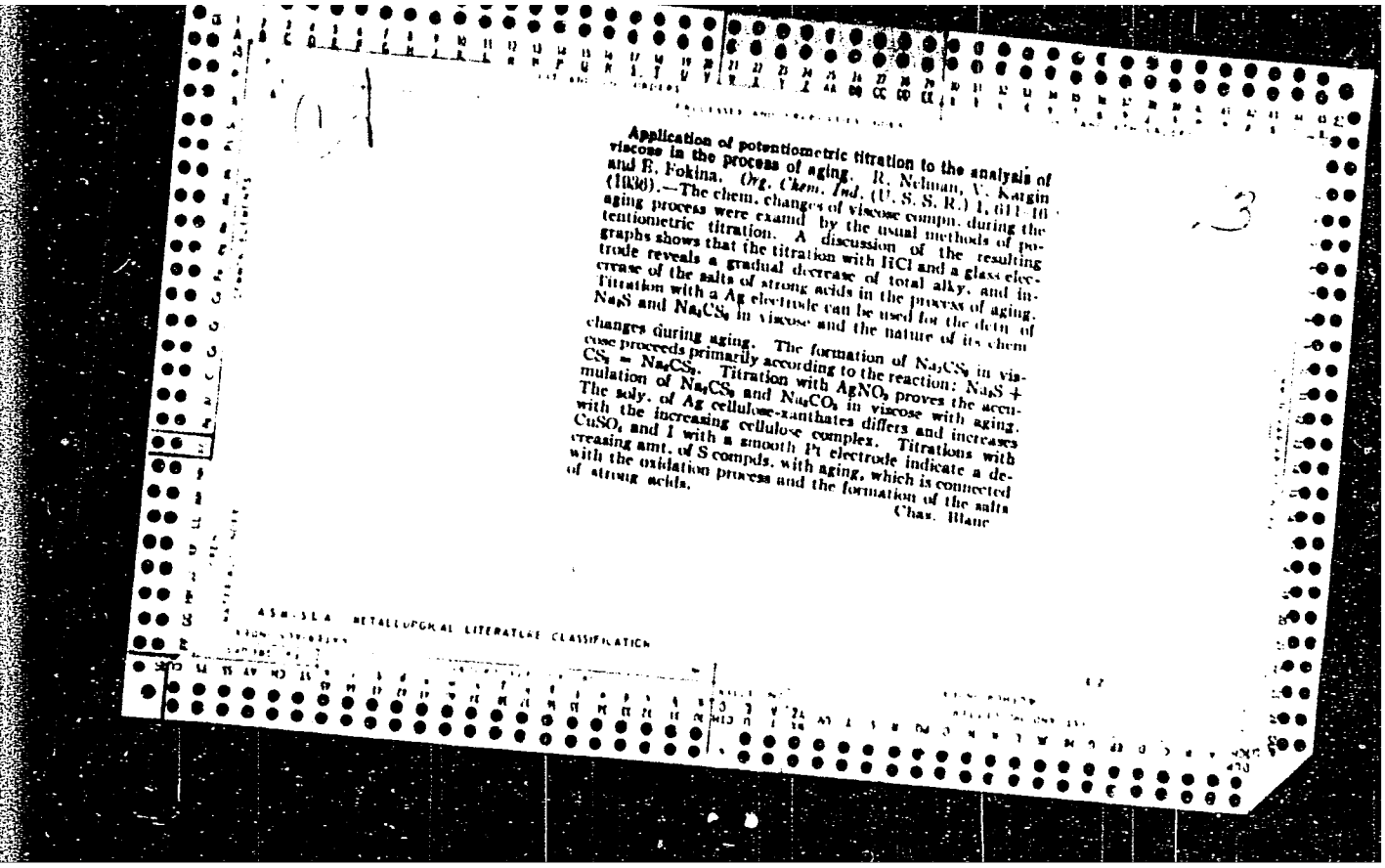
R. S.

Electrochemical properties of highly purified silica sols. A. I. Rabinovich and V. A. Kargin (Acta Physicochim. U.R.S.S., 1935, 3, 97—118).—SiO_2 sols obtained by hydrolysis of $SiCl_4$ cannot be prepared in the pure state by electrodialysis through a carefully purified parchment-paper membrane. The acidic properties of "pure" SiO_2 sols are due to acid (usually HCl) in the intermicellar liquid of the sol. SiO_2 sols obtained by oxidation of SiH_4 by O_2 in aq. solution possess no acidic properties, and only a very small quantity of compensating ions in the outer shell of the double layer. The stability of such pure SiO_2 sols is maintained solely by the lyophilic properties of H_2SiO_3, but HCl exerts a stabilising action. The cataphoretic velocity and the ζ-potential are small, and are dependent to a high degree on the purity of the sol.

A. J. M.

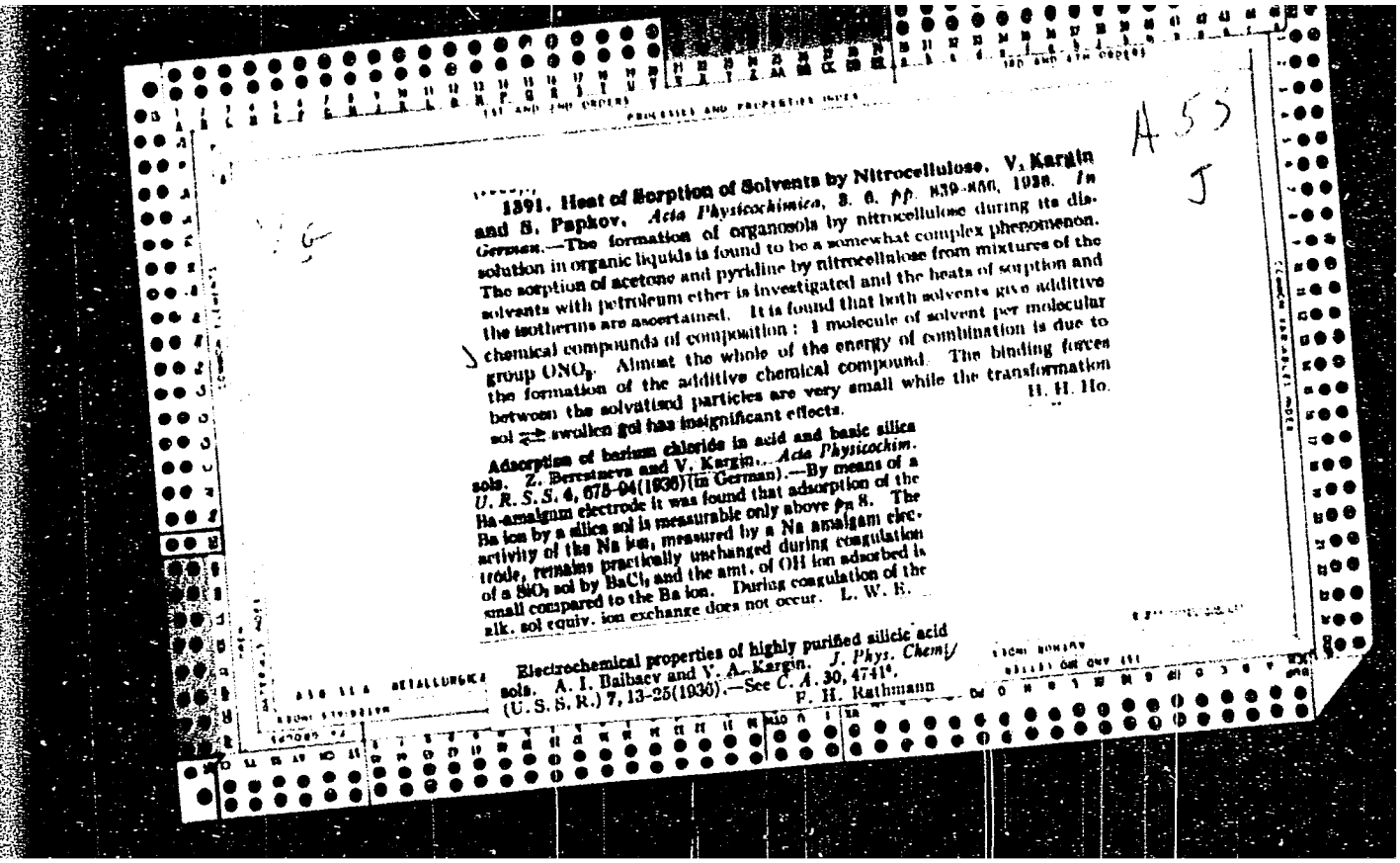
Changes in colloidal systems during their interaction with electrolytes. V. A. Kargin and A. I. Rabinovich. *J. Phys. Chem.* (U. S. S. R.) 6, 1133–44(1935).—In exchange [illegible] "equivalence" cannot be expected. The coagulation [illegible] adsorption of both ions of the electrolyte causes changes not only of the ζ-potential but also of the total ε-potential of the particles. The chief factors affecting coagulation of lyophilic colloids are discussed.

E. H. Rathmann



Application of potentiometric titration to the analysis of viscose in the process of aging. R. Neiman, V. Kargin and E. Fokina. *Org. Chem. Ind.* (U. S. S. R.) 1, 611–16 (1936).—The chem. changes of viscose compn. during the aging process were examd. by the usual methods of potentiometric titration. A discussion of the resulting graphs shows that the titration with HCl and a glass electrode reveals a gradual decrease of total alky. and increase of the salts of strong acids in the process of aging. Titration with a Ag electrode can be used for the detn. of Na_2S and Na_2CS_3 in viscose and the nature of its chem changes during aging. The formation of Na_2CS_3 in viscose proceeds primarily according to the reaction: $Na_2S + CS_2 = Na_2CS_3$. Titration with $AgNO_3$ proves the accumulation of Na_2CS_3 and Na_2CO_3 in viscose with aging. The soly. of Ag cellulose-xanthates differs and increases with the increasing cellulose complex. Titrations with $CuSO_4$ and I with a smooth Pt electrode indicate a decreasing amt. of S compds. with aging, which is connected with the oxidation process and the formation of the salts of strong acids.

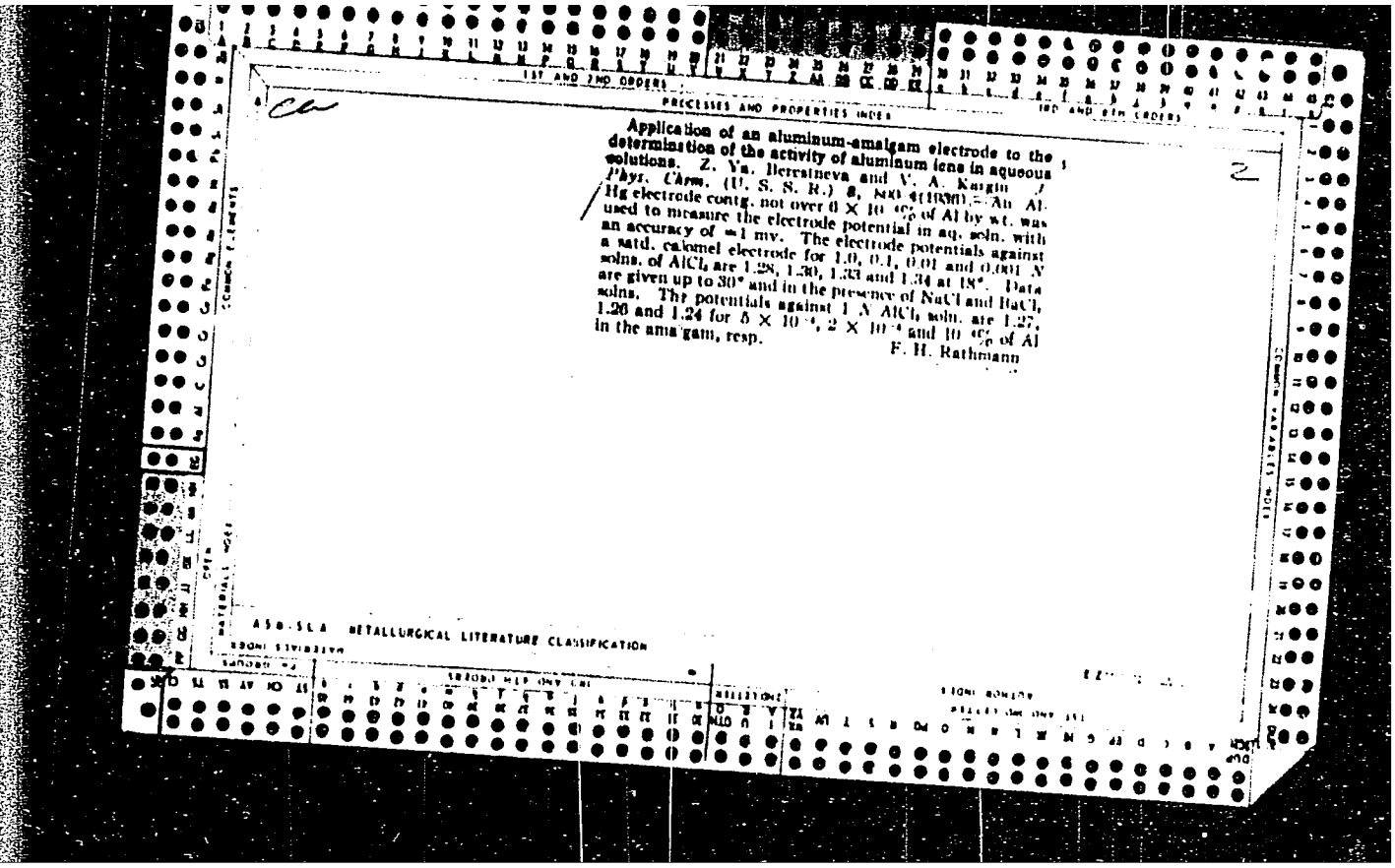
Chas. Blanc



1391. **Heat of Sorption of Solvents by Nitrocellulose.** V. Kargin and S. Papkov. *Acta Physicochimica*, 8. 6. *pp.* 839-860, 1938. *In German.*—The formation of organosols by nitrocellulose during its dissolution in organic liquids is found to be a somewhat complex phenomenon. The sorption of acetone and pyridine by nitrocellulose from mixtures of the solvents with petroleum ether is investigated and the heats of sorption and the isotherms are ascertained. It is found that both solvents give additive chemical compounds of composition: 1 molecule of solvent per molecular group ONO_2. Almost the whole of the energy of combination is due to the formation of the additive chemical compound. The binding forces between the solvatized particles are very small while the transformation sol ⇄ swollen gel has insignificant effects. H. H. Ho.

Adsorption of barium chloride in acid and basic silica sols. Z. Berestneva and V. Kargin. *Acta Physicochim. U. R. S. S.* 4, 675-94(1936)(in German).—By means of a Ba-amalgam electrode it was found that adsorption of the Ba ion by a silica sol is measurable only above *p*H 8. The activity of the Na ion, measured by a Na amalgam electrode, remains practically unchanged during coagulation of a SiO_2 sol by $BaCl_2$ and the amt. of OH ion adsorbed is small compared to the Ba ion. During coagulation of the alk. sol equiv. ion exchange does not occur. L. W. E.

Electrochemical properties of highly purified silicic acid sols. A. I. Baibacv and V. A. Kargin. *J. Phys. Chem.* (U. S. S. R.) 7, 13-25(1936).—See *C. A.* 30, 4741[6]. F. H. Rathmann

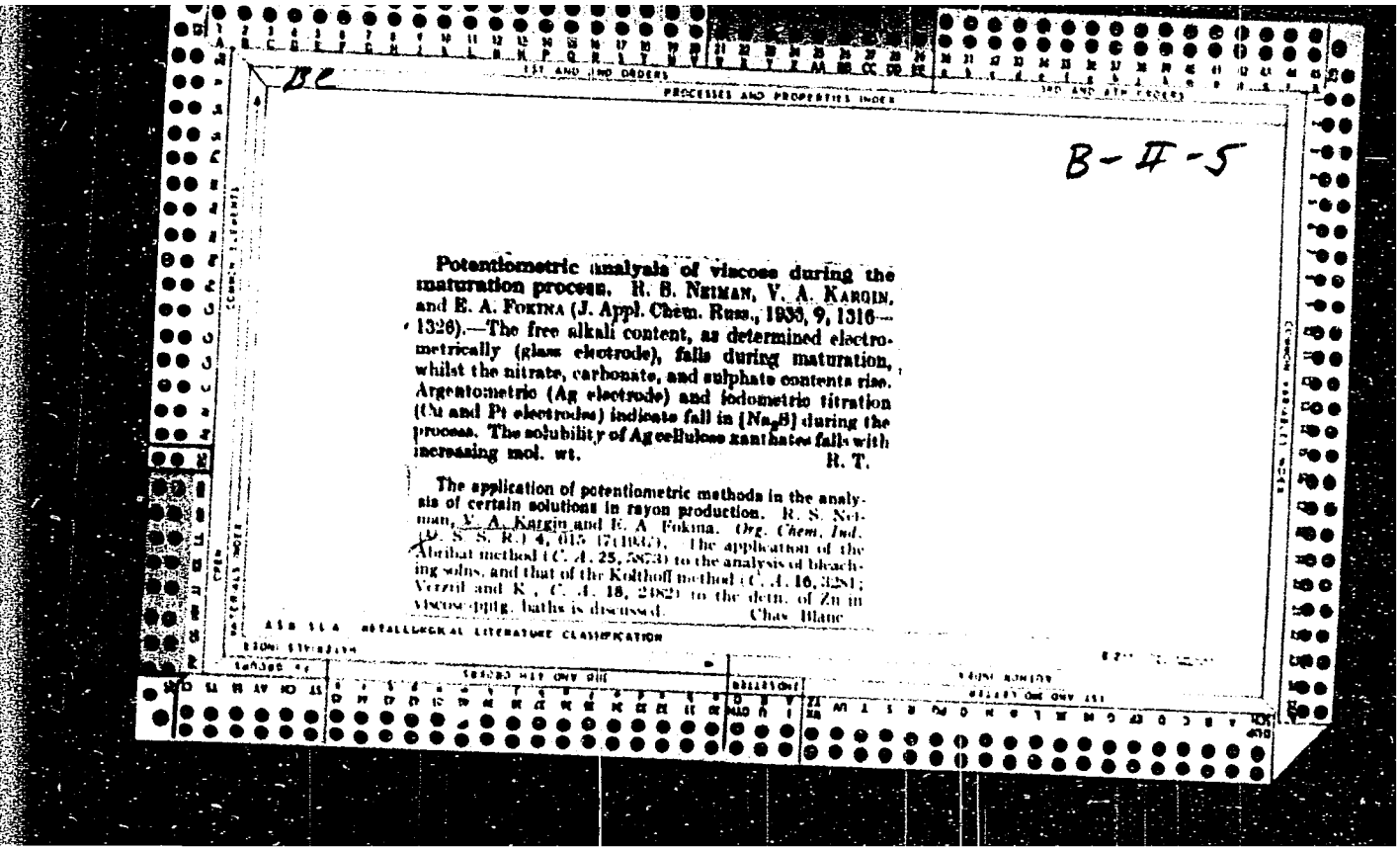


PROCESSES AND PROPERTIES INDEX

Application of an aluminum-amalgam electrode to the determination of the activity of aluminum ions in aqueous solutions. Z. Ya. Berezineva and V. A. Kargin. *Zhur. Fiz. Khim.* (U. S. S. R.) 8, 880-4 (1936).—An Al-Hg electrode contg. not over 6×10^{-6}% of Al by wt. was used to measure the electrode potential in aq. soln. with an accuracy of ±1 mv. The electrode potentials against a satd. calomel electrode for 1.0, 0.1, 0.01 and 0.001 *N* solns. of $AlCl_3$ are 1.28, 1.30, 1.33 and 1.34 at 18°. Data are given up to 30° and in the presence of NaCl and $BaCl_2$ solns. The potentials against 1 *N* $AlCl_3$ soln. are 1.27, 1.26 and 1.24 for 5×10^{-4}, 2×10^{-4} and 10^{-4}% of Al in the amalgam, resp.

F. H. Rathmann

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



B-II-5

Potentiometric analysis of viscose during the maturation process. R. B. Neiman, V. A. Kargin, and E. A. Fokina (J. Appl. Chem. Russ., 1936, 9, 1316—1326).—The free alkali content, as determined electrometrically (glass electrode), falls during maturation, whilst the nitrate, carbonate, and sulphate contents rise. Argentometric (Ag electrode) and iodometric titration (Cu and Pt electrodes) indicate fall in [Na_2S] during the process. The solubility of Ag cellulose xanthates falls with increasing mol. wt. R. T.

The application of potentiometric methods in the analysis of certain solutions in rayon production. R. S. Neiman, V. A. Kargin and E. A. Fokina. *Org. Chem. Ind.* (U. S. S. R.) 4, 615 (1936). The application of the Abribat method (C. A. 25, 5873) to the analysis of bleaching solns. and that of the Kolthoff method (C. A. 16, 3281; Verzil and K., C. A. 18, 2082) to the detn. of Zn in viscose-ppting. baths is discussed. Chas. Blanc

PROCESSES AND PROPERTIES INDEX

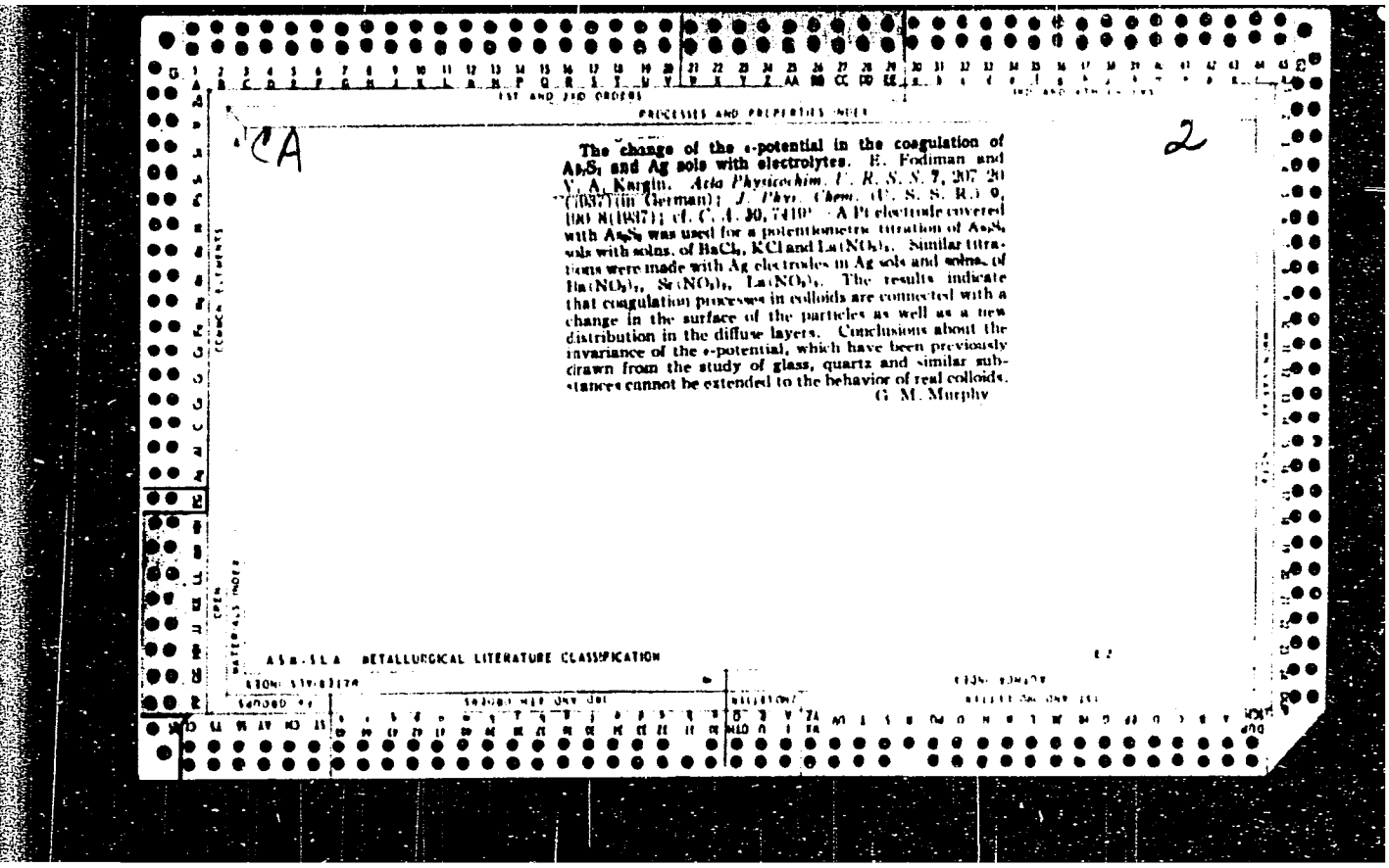
a-1

*Application of Aluminium Amalgam Electrode to the Determination of the Activity of Aluminium Ions in Aqueous Solutions. Z. Berestneva and V. Kargin (Acta Physicochimica U.R.S.S., 1937, 6, (3), 320-320). [In English.] A new form of aluminium amalgam electrode containing not more than 8 - 10 4% by weight of aluminium is used to determine the potential (E) of aluminium amalgams in aqueous solutions correct to ± 1 mv. Values of E for aqueous solutions of pure aluminium trichloride of concentrations 1N to 0.001N are tabulated. J. S. G. T.

Coagulation of acetylcellulose sols. V. A. Kargin and A. A. Stepanova (Acta Physicochim. U.R.S.S., 1937, 6, 183—194).—The changes in viscosity, osmotic pressure, and turbidity of cellulose acetate sols during coagulation have been measured. Addition of gel to the sols greatly accelerates the coagulation. The velocity of coagulation is not greatly influenced by temp. J. W. S.

Effect of electrolytes on nonaqueous solutions of nitrocellulose. I. Effect of nitric acid and ammonia. V. A. Kargin and N. V. Mikhailov. *Acta Physicochim. U. R. S. S.* 6, 823-42(1937)(in German). **II. Action of the salts of heavy metals and of amines.** N. V. Mikhailov and V. A. Kargin. *Ibid.* 843-58 (in German). See C. A. 31, 8112. E. J. C.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

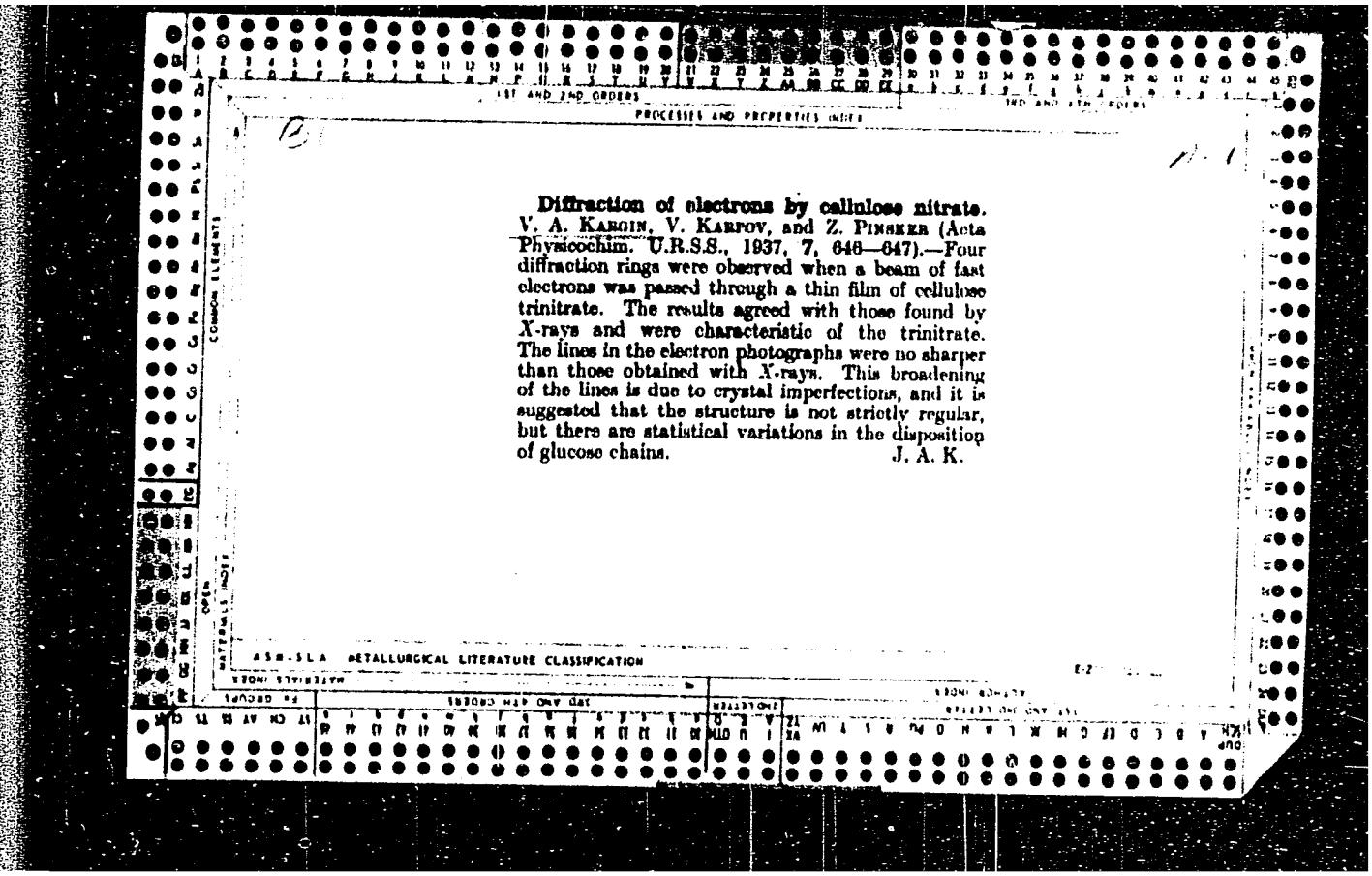


CA

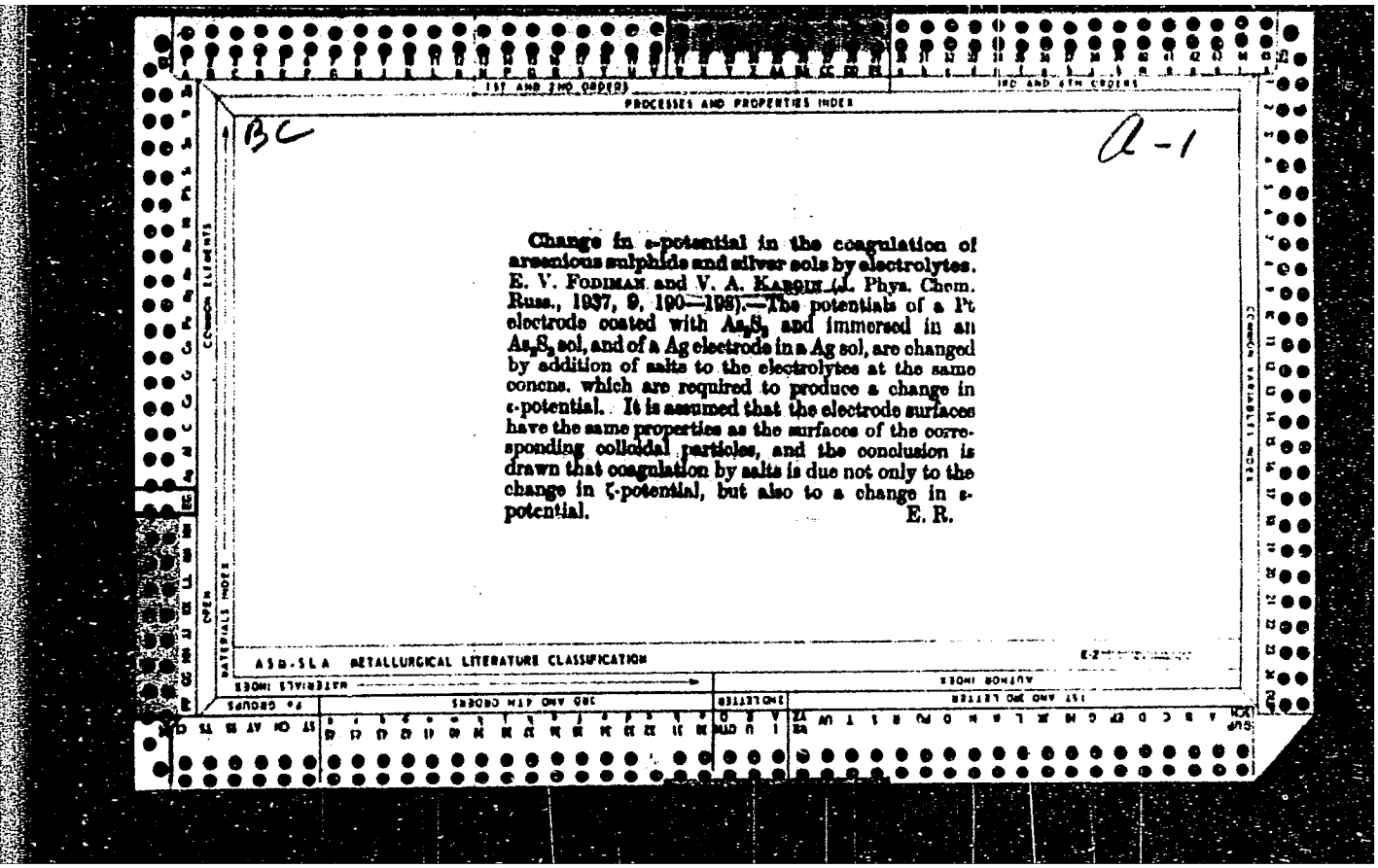
2

The change of the ε-potential in the coagulation of As_2S_3 and Ag sols with electrolytes. E. Fodiman and V. A. Kargin. *Acta Physicochim. U. R. S. S.* 7, 207-20 (1937) (in German); *J. Phys. Chem. (U. S. S. R.)* 9, 180 N(1937); cf. *C. A.* 30, 7410⁹. A Pt electrode covered with Ag_2S was used for a potentiometric titration of As_2S_3 sols with solns. of $BaCl_2$, KCl and $La(NO_3)_3$. Similar titrations were made with Ag electrodes in Ag sols and solns. of $Ba(NO_3)_2$, $Sr(NO_3)_2$, $La(NO_3)_3$. The results indicate that coagulation processes in colloids are connected with a change in the surface of the particles as well as a new distribution in the diffuse layers. Conclusions about the invariance of the ε-potential, which have been previously drawn from the study of glass, quartz and similar substances cannot be extended to the behavior of real colloids.

G. M. Murphy



Diffraction of electrons by cellulose nitrate. V. A. KARGIN, V. KARPOV, and Z. PINSKER (Acta Physicochim. U.R.S.S., 1937, **7**, 646—647).—Four diffraction rings were observed when a beam of fast electrons was passed through a thin film of cellulose trinitrate. The results agreed with those found by *X*-rays and were characteristic of the trinitrate. The lines in the electron photographs were no sharper than those obtained with *X*-rays. This broadening of the lines is due to crystal imperfections, and it is suggested that the structure is not strictly regular, but there are statistical variations in the disposition of glucose chains. J. A. K.



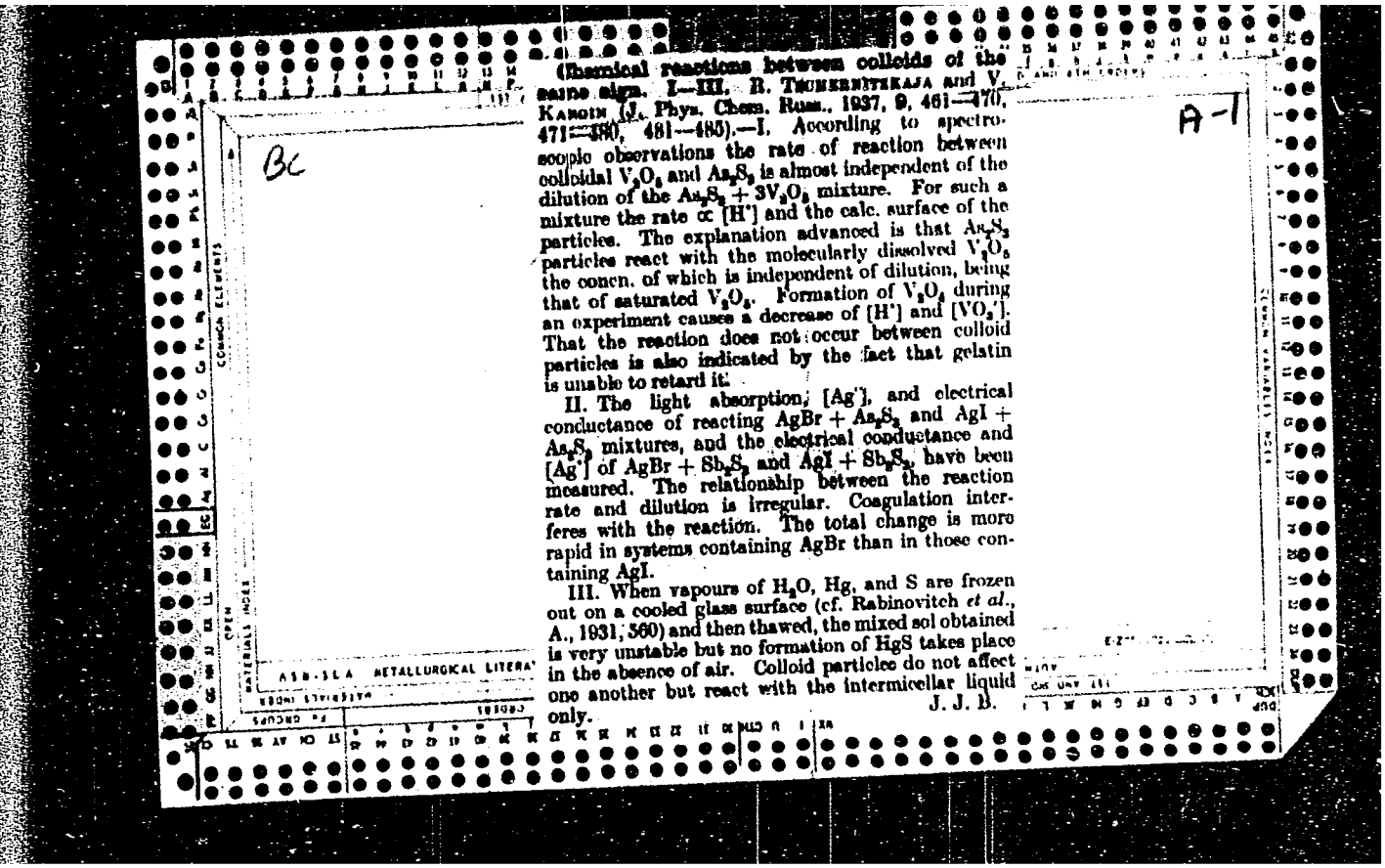
PROCESSES AND PROPERTIES INDEX

BC

A-1

Change in ε-potential in the coagulation of arsenious sulphide and silver sols by electrolytes. E. V. Fodiman and V. A. Kargin (J. Phys. Chem. Russ., 1937, 9, 190—198).—The potentials of a Pt electrode coated with As_2S_3 and immersed in an As_2S_3 sol, and of a Ag electrode in a Ag sol, are changed by addition of salts to the electrolytes at the same concns. which are required to produce a change in ε-potential. It is assumed that the electrode surfaces have the same properties as the surfaces of the corresponding colloidal particles, and the conclusion is drawn that coagulation by salts is due not only to the change in ζ-potential, but also to a change in ε-potential. E. R.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

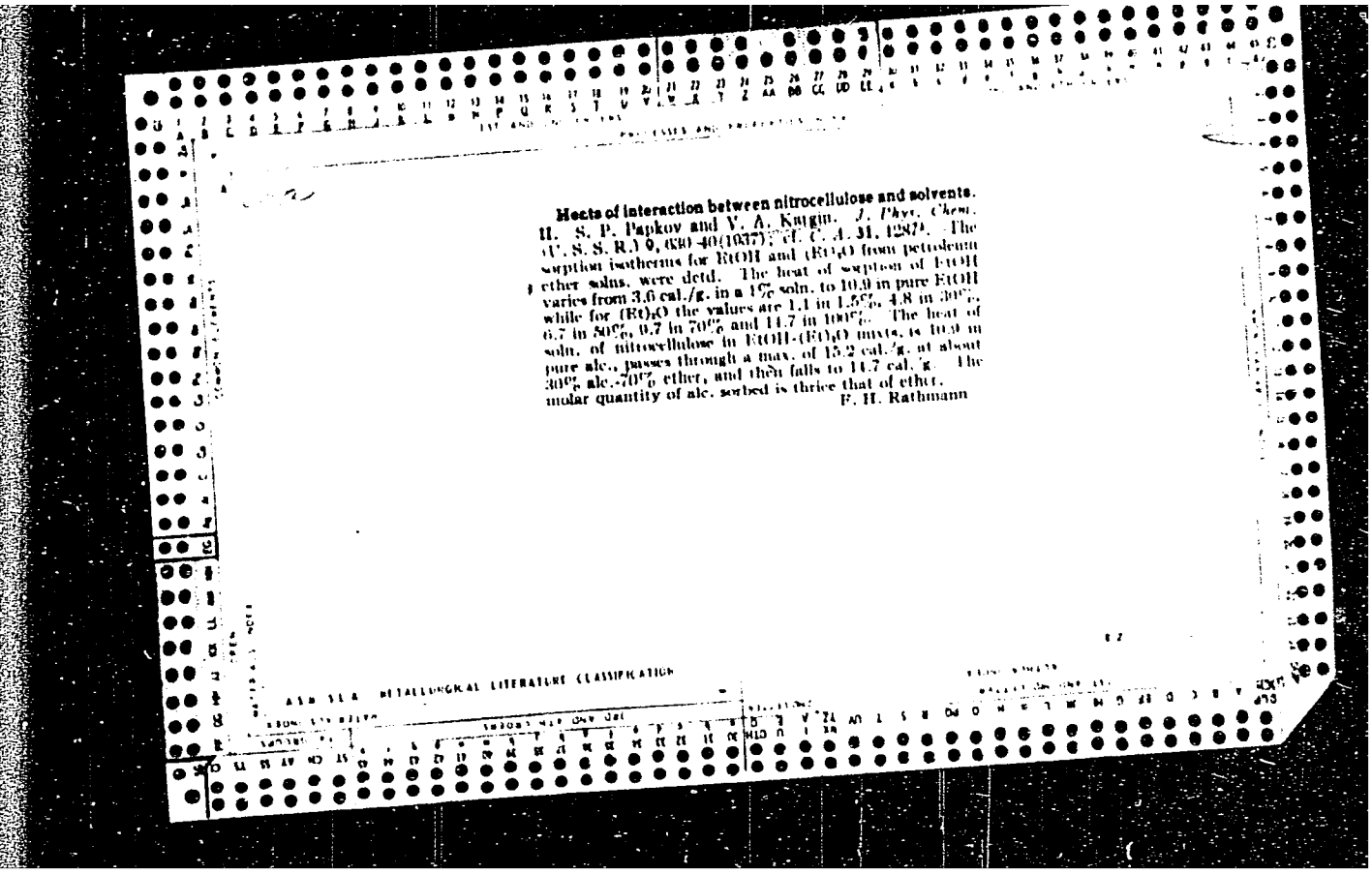


(Chemical reactions between colloids of the same sign. I—III. B. TSUKERNITSKAJA and V. KARGIN (J. Phys. Chem. Russ., 1937, 9, 461—470, 471—480, 481—485).—I. According to spectroscopic observations the rate of reaction between colloidal V_2O_5 and As_2S_3 is almost independent of the dilution of the $As_2S_3 + 3V_2O_5$ mixture. For such a mixture the rate $\propto$ [H·] and the calc. surface of the particles. The explanation advanced is that As_2S_3 particles react with the molecularly dissolved V_2O_5 the concn. of which is independent of dilution, being that of saturated V_2O_5. Formation of V_2O_5 during an experiment causes a decrease of [H·] and [VO_3·]. That the reaction does not occur between colloid particles is also indicated by the fact that gelatin is unable to retard it.

II. The light absorption, [Ag·], and electrical conductance of reacting $AgBr + As_2S_3$ and $AgI + As_2S_3$ mixtures, and the electrical conductance and [Ag·] of $AgBr + Sb_2S_3$ and $AgI + Sb_2S_3$ have been measured. The relationship between the reaction rate and dilution is irregular. Coagulation interferes with the reaction. The total change is more rapid in systems containing AgBr than in those containing AgI.

III. When vapours of H_2O, Hg, and S are frozen out on a cooled glass surface (cf. Rabinovitch *et al.*, A., 1931, 560) and then thawed, the mixed sol obtained is very unstable but no formation of HgS takes place in the absence of air. Colloid particles do not affect one another but react with the intermicellar liquid only.

J. J. B.



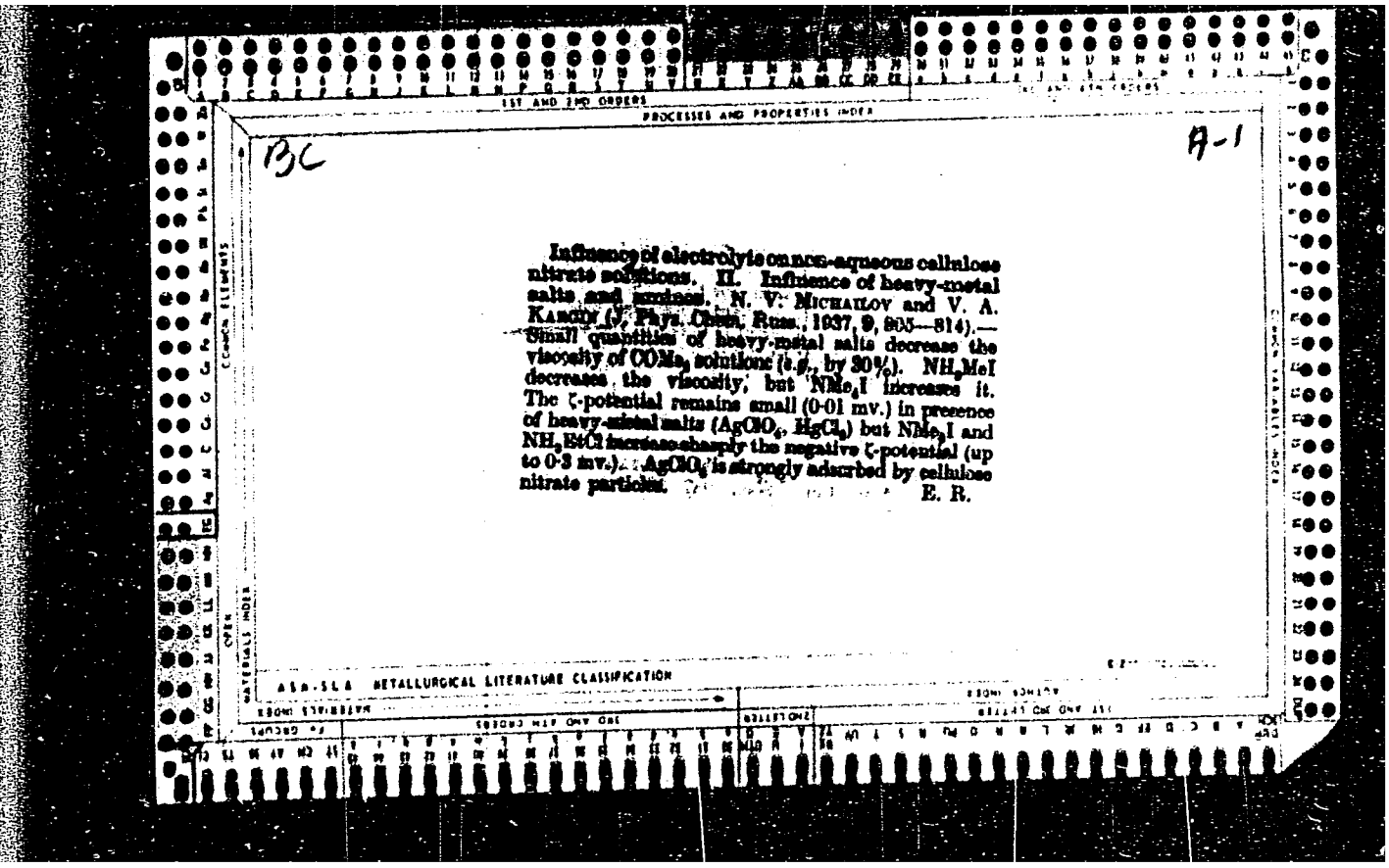
Heats of interaction between nitrocellulose and solvents. H. S. P. Papkov and V. A. Kargin. *J. Phys. Chem. U. S. S. R.* 10, 680-40(1937); cf. *C. A.* 31, 1287⁹. The sorption isotherms for EtOH and $(Et)_2O$ from petroleum ether solns. were detd. The heat of sorption of EtOH varies from 3.6 cal./g. in a 1% soln. to 10.9 in pure EtOH while for $(Et)_2O$ the values are 1.1 in 1.5%, 4.8 in 30%, 6.7 in 80%, 9.7 in 70% and 14.7 in 100%. The heat of soln. of nitrocellulose in EtOH-$(Et)_2O$ mixts. is 10.9 in pure alc., passes through a max. of 15.2 cal./g. at about 30% alc.-70% ether, and then falls to 14.7 cal./g. The molar quantity of alc. sorbed is thrice that of ether.

F. H. Rathmann

KARGIN, V. A.

V

Effect of electrolytes on nonaqueous solutions of nitrocelluloses. I. Effect of nitric acid and ammonia. V. A. Kargin and N. V. Nikitina. *J. Phys. Chem. (U. S. S. R.)* 9, 701-5(1937).—By dialyzing acetone solns. of nitrocellulose it is shown that their coagul. is due not to the dissocn. of the nitrocellulose but to the presence of HNO_3 and other inorg. and org. electrolytes. On adding NH_3 to the soln. the viscosity passes through a max. at a point corresponding to exact neutralization of the acids present. By a detn. of the ζ-potentials it was shown that absolutely pure nitrocellulose bears no elec. charge and has a ζ-potential of 1.2×10^{-2} v. in a 2% and 530×10^{-4} v. in a 5% soln. $HClO_4$ is strongly adsorbed and evidently forms a mol. compd. The changes in viscosity and ζ-potential produced by addn. of HNO_3 and NH_3 do not have a simple direct relation and the former are due to a solvation layer acting as a mol. with a large dipole moment. II. Action of the salts of heavy metals and of amines. *Ibid.* 805-14.—Viscosity is strongly lowered (30% for 0.1 *N*) by heavy metal electrolytes. $MeNH_3I$ and $EtNH_3Cl$ also lower viscosity but Me_4NI increases it considerably. The first two amines strongly increase the ζ-potentials. $HClO_4$ affects viscosity and ζ-potential as does HNO_3 and is strongly adsorbed. $(C_5H_{11})_4NI$ strongly increases the cathode transfer of particles. F. H. Rathmann



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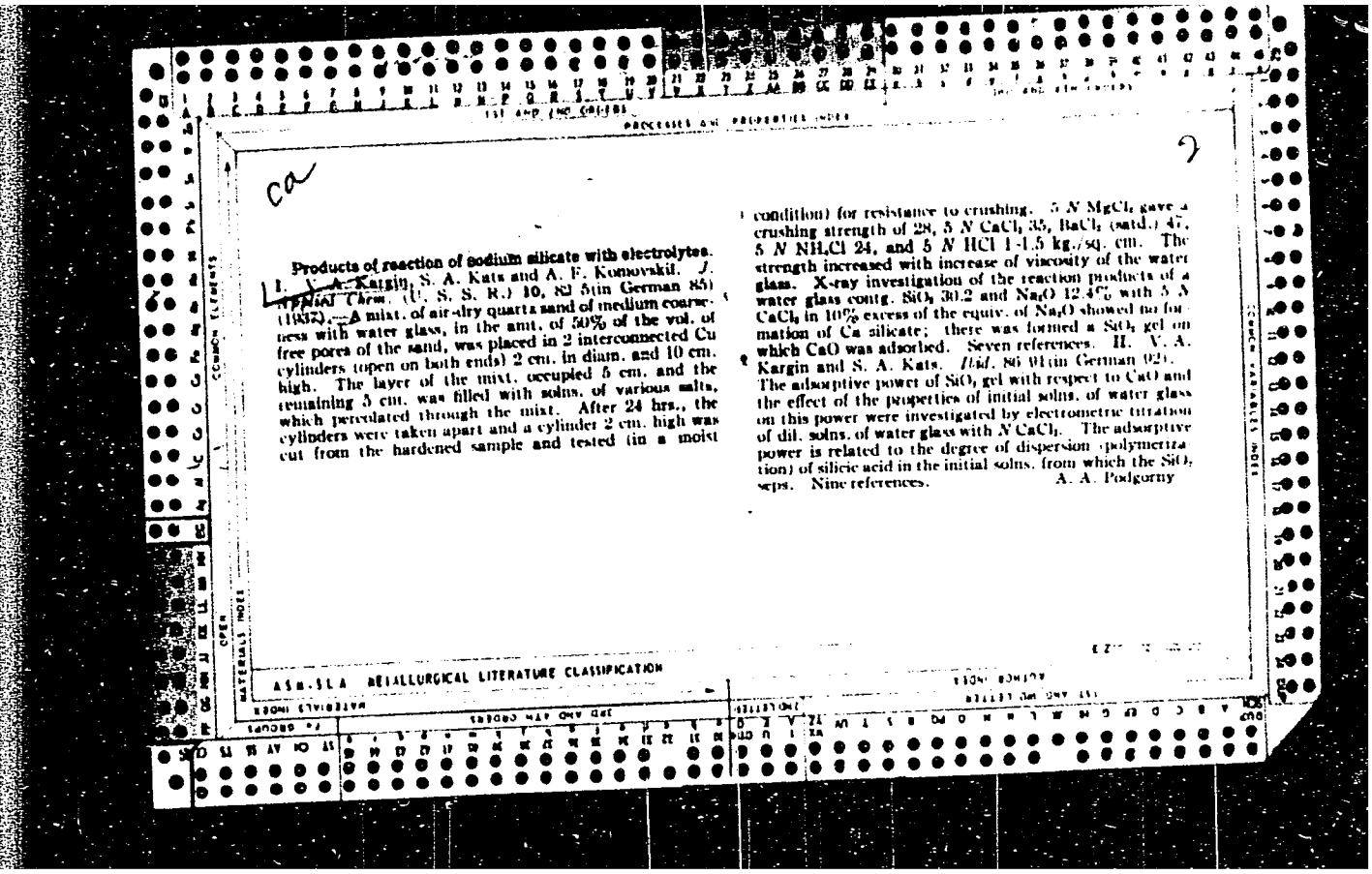
A-1

Influence of electrolyte on non-aqueous cellulose nitrate solutions. II. Influence of heavy-metal salts and acetone. N. V. MICHAILOV and V. A. KARGIN (*J. Phys. Chem. Russ.*, 1937, **9**, 805—814).—Small quantities of heavy-metal salts decrease the viscosity of $CO(Me)_2$ solutions (e.g., by 30%). NH_2MeI decreases the viscosity, but NMe_3I increases it. The ζ-potential remains small (0·01 mv.) in presence of heavy-metal salts ($AgClO_4$, $HgCl_2$) but NMe_3I and $NH_2Et{\cdot}Cl$ increase sharply the negative ζ-potential (up to 0·3 mv.). $AgClO_4$ is strongly adsorbed by cellulose nitrate particles.

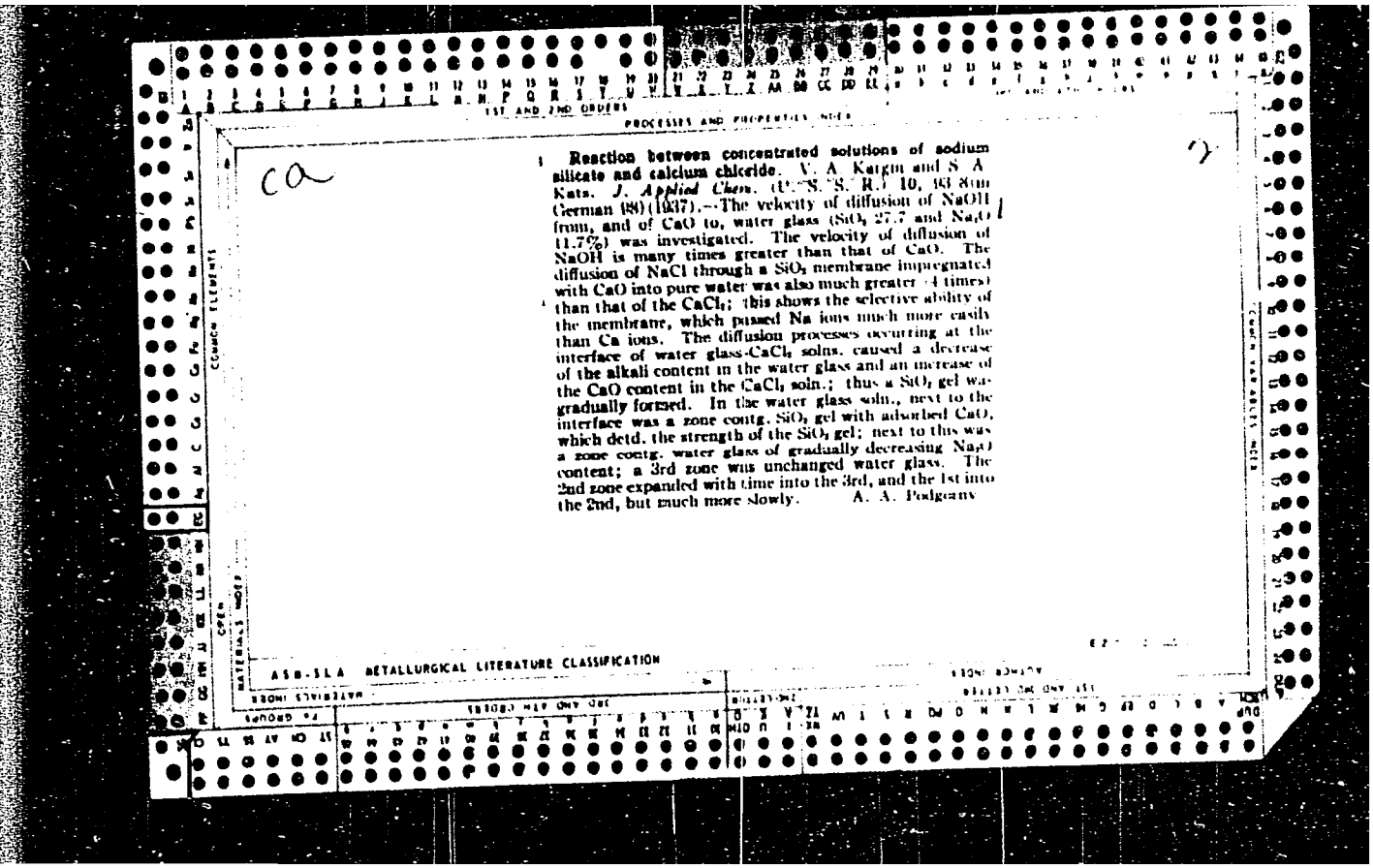
E. R.



CA

Products of reaction of sodium silicate with electrolytes. I. A. Kargin, S. A. Kats and A. F. Komovskii. *J. Gen. Chem.* (U. S. S. R.) **10**, 825-35(in German 85) (1932).—A mixt. of air-dry quartz sand of medium coarseness with water glass, in the amt. of 50% of the vol. of free pores of the sand, was placed in 2 interconnected Cu cylinders (open on both ends) 2 cm. in diam. and 10 cm. high. The layer of the mixt. occupied 5 cm. and the remaining 5 cm. was filled with solns. of various salts, which percolated through the mixt. After 24 hrs., the cylinders were taken apart and a cylinder 2 cm. high was cut from the hardened sample and tested (in a moist condition) for resistance to crushing. 5 *N* $MgCl_2$ gave a crushing strength of 28, 5 *N* $CaCl_2$ 35, $BaCl_2$ (satd.) 47, 5 *N* NH_4Cl 24, and 5 *N* HCl 1-1.5 kg./sq. cm. The strength increased with increase of viscosity of the water glass. X-ray investigation of the reaction products of a water glass contg. SiO_2 30.2 and Na_2O 12.4% with 5 *N* $CaCl_2$ in 10% excess of the equiv. of Na_2O showed no formation of Ca silicate; there was formed a SiO_2 gel on which CaO was adsorbed. Seven references. II. V. A. Kargin and S. A. Kats. *Ibid.* 86-91(in German 92). The adsoptive power of SiO_2 gel with respect to CaO and the effect of the properties of initial solns. of water glass on this power were investigated by electrometric titration of dil. solns. of water glass with *N* $CaCl_2$. The adsorptive power is related to the degree of dispersion (polymerization) of silicic acid in the initial solns. from which the SiO_2 seps. Nine references. A. A. Podgorny

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



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Reaction between concentrated solutions of sodium silicate and calcium chloride. V. A. Kargin and S. A. Kats. *J. Applied Chem.* (U.S.S.R.) 10, 93-8(in German 98)(1937).—The velocity of diffusion of NaOH from, and of CaO to, water glass (SiO_2 27.7 and Na_2O 11.7%) was investigated. The velocity of diffusion of NaOH is many times greater than that of CaO. The diffusion of NaCl through a SiO_2 membrane impregnated with CaO into pure water was also much greater (4 times) than that of the $CaCl_2$; this shows the selective ability of the membrane, which passed Na ions much more easily than Ca ions. The diffusion processes occurring at the interface of water glass-$CaCl_2$ solns. caused a decrease of the alkali content in the water glass and an increase of the CaO content in the $CaCl_2$ soln.; thus a SiO_2 gel was gradually formed. In the water glass soln., next to the interface was a zone contg. SiO_2 gel with adsorbed CaO, which detd. the strength of the SiO_2 gel; next to this was a zone contg. water glass of gradually decreasing Na_2O content; a 3rd zone was unchanged water glass. The 2nd zone expanded with time into the 3rd, and the 1st into the 2nd, but much more slowly. A. A. Podgainy

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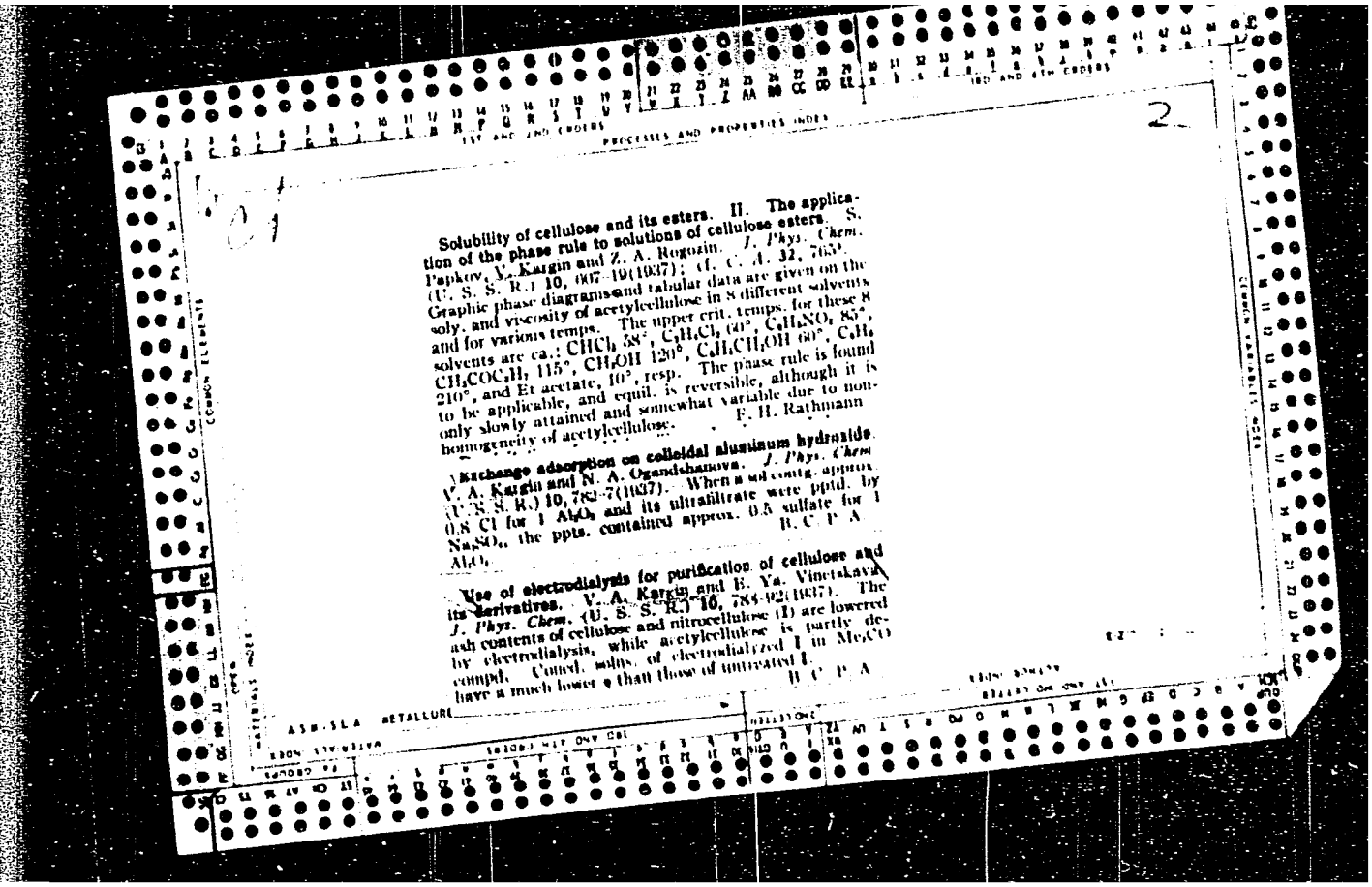
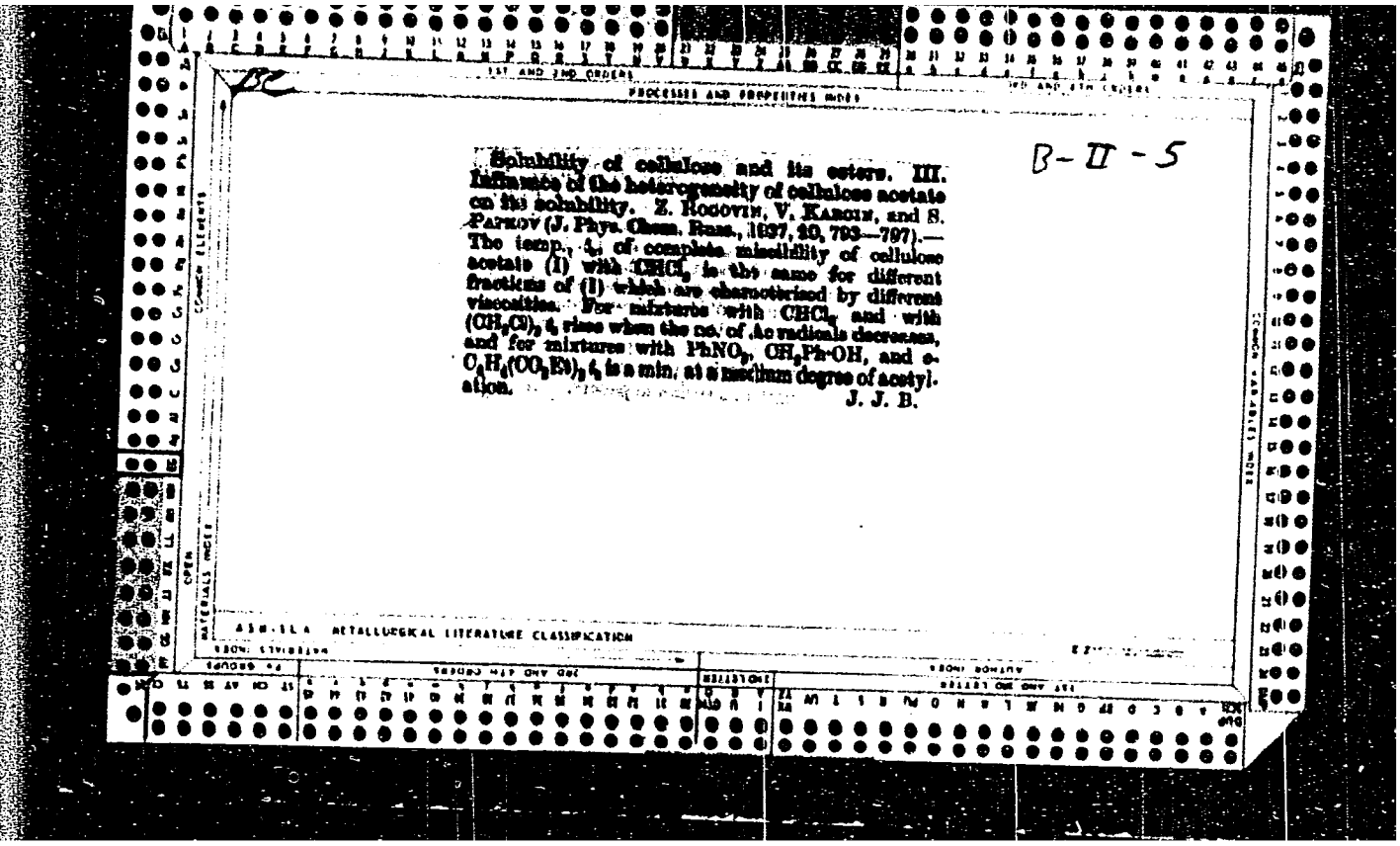


Solubility of cellulose and its esters. II. The application of the phase rule to solutions of cellulose esters. S. Papkov, V. Kargin and Z. A. Rogozin. *J. Phys. Chem.* (U. S. S. R.) **10**, 607–19(1937); cf. C. A. **32**, 765⁹. Graphic phase diagrams and tabular data are given on the soly. and viscosity of acetylcellulose in 8 different solvents and for various temps. The upper crit. temps. for these 8 solvents are ca.: $CHCl_3$ 58°, C_6H_5Cl 60°, $C_6H_5NO_2$ 85°, $CH_3COC_2H_5$ 115°, CH_3OH 120°, $C_6H_5CH_2OH$ 60°, C_6H_6 210°, and Et acetate, 10°, resp. The phase rule is found to be applicable, and equil. is reversible, although it is only slowly attained and somewhat variable due to non-homogeneity of acetylcellulose. E. H. Rathmann

Exchange adsorption on colloidal aluminum hydroxide. V. A. Kargin and N. A. Ogandzhanova. *J. Phys. Chem.* (U. S. S. R.) **10**, 783–7(1937). When a sol contg. approx. 0.8 Cl for 1 Al_2O_3 and its ultrafiltrate were pptd. by Na_2SO_4, the ppts. contained approx. 0.5 sulfate for 1 Al_2O_3. B. C. P. A

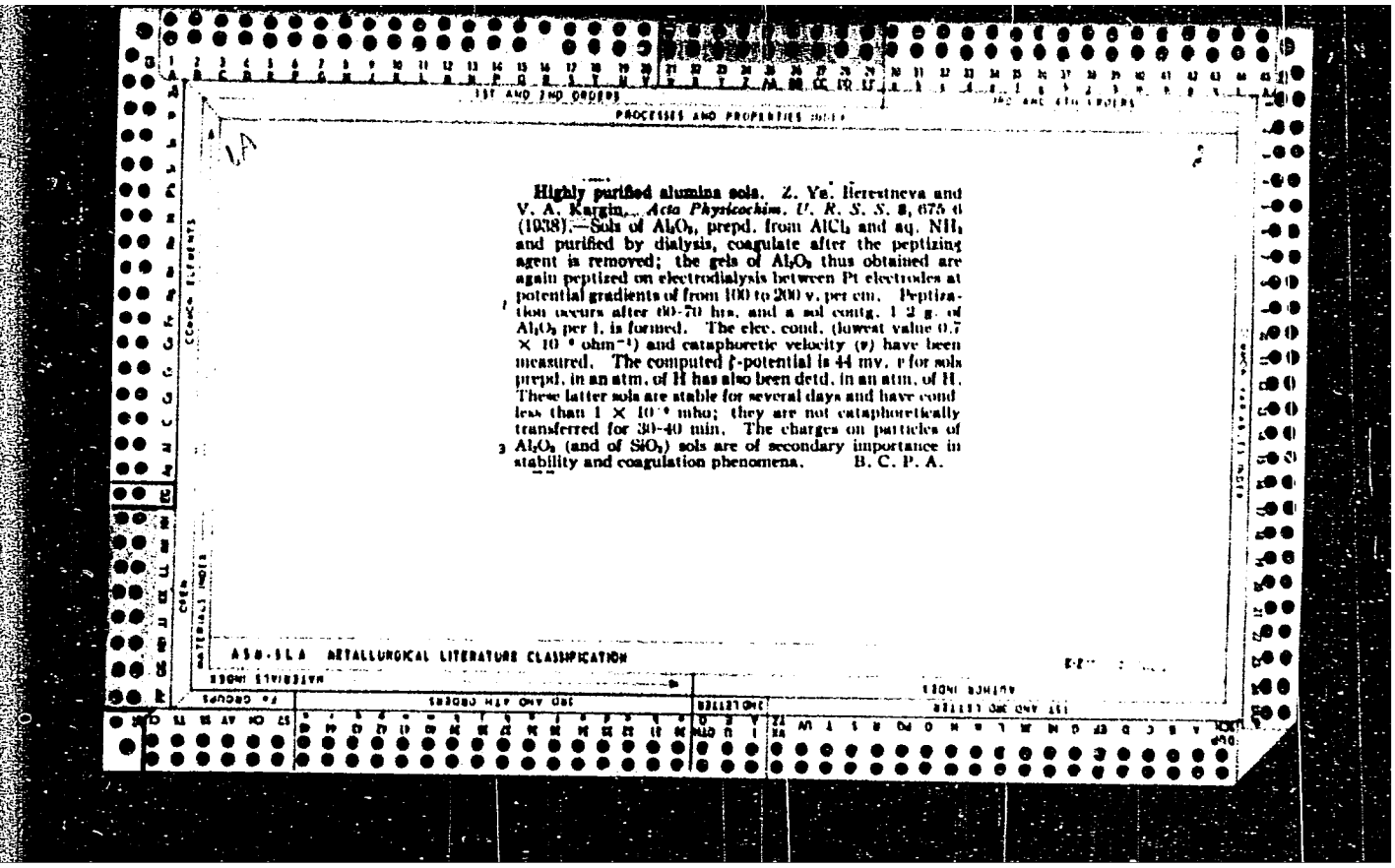
Use of electrodialysis for purification of cellulose and its derivatives. V. A. Kargin and E. Ya. Vinetskaya. *J. Phys. Chem.* (U. S. S. R.) **10**, 788–92(1937). The ash contents of cellulose and nitrocellulose (I) are lowered by electrodialysis, while acetylcellulose is partly decompd. Concd. solns. of electrodialyzed I in Me_2CO have a much lower η than those of unfiltrated I. B. C. P. A



B-II-5

Solubility of cellulose and its esters. III. Influence of the heterogeneity of cellulose acetate on its solubility. Z. Rogovin, V. Kargin, and S. Patrov (J. Phys. Chem. Russ., 1937, 10, 793—797).—The temp., t_1, of complete miscibility of cellulose acetate (I) with $CHCl_3$ is the same for different fractions of (I) which are characterised by different viscosities. For mixtures with $CHCl_3$ and with $(CH_2Cl)_2$ t_1 rises when the no. of Ac radicals decreases, and for mixtures with $PhNO_2$, $CH_2Ph{\cdot}OH$, and o-$C_6H_4(CO_2Et)_2$ t_1 is a min. at a medium degree of acetylation.

J. J. B.



PROCESSES AND PROPERTIES INDEX

Highly purified alumina sols. Z. Ye. Herestneva and V. A. Kargin. *Acta Physicochim. U. R. S. S.* 8, 675-6 (1938).—Sols of Al_2O_3, prepd. from $AlCl_3$ and aq. NH_4 and purified by dialysis, coagulate after the peptizing agent is removed; the gels of Al_2O_3 thus obtained are again peptized on electrodialysis between Pt electrodes at potential gradients of from 100 to 200 v. per cm. Peptization occurs after 60-70 hrs. and a sol contg. 1.2 g. of Al_2O_3 per l. is formed. The elec. cond. (lowest value 0.7×10^{-6} ohm^{-1}) and cataphoretic velocity (v) have been measured. The computed ζ-potential is 44 mv. v for sols prepd. in an atm. of H has also been detd. in an atm. of H. These latter sols are stable for several days and have cond. less than 1×10^{-6} mho; they are not cataphoretically transferred for 30-40 min. The charges on particles of Al_2O_3 (and of SiO_2) sols are of secondary importance in stability and coagulation phenomena. B. C. P. A.

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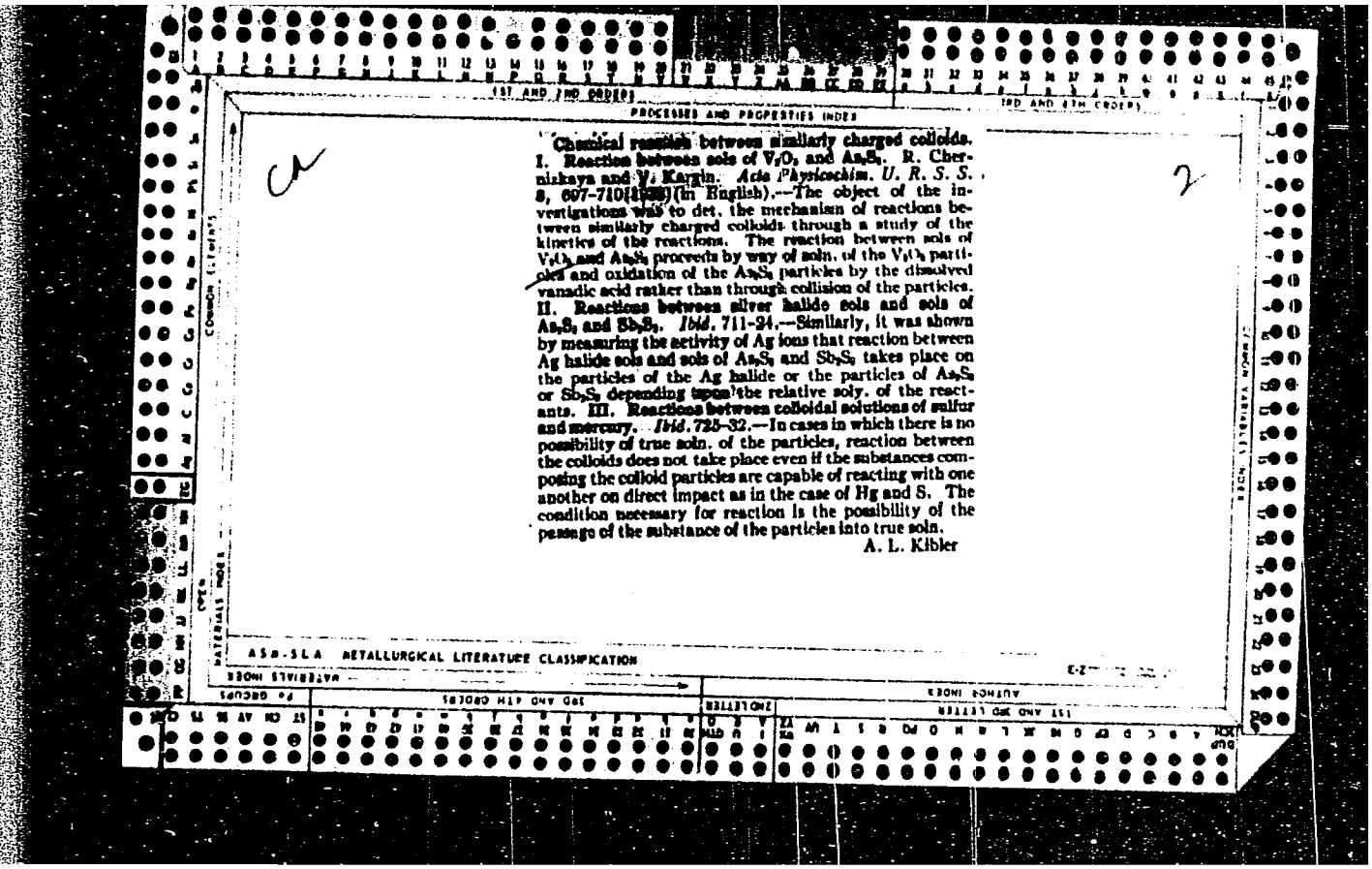

PROCESSES AND PROPERTIES INDEX

Chemical reaction between similarly charged colloids. I. Reaction between sols of V_2O_5 and As_2S_3. R. Chernikaya and V. Kargin. *Acta Physicochim. U. R. S. S.* 8, 697-710[1938](In English).—The object of the investigations was to det. the mechanism of reactions between similarly charged colloids through a study of the kinetics of the reactions. The reaction between sols of V_2O_5 and As_2S_3 proceeds by way of soln. of the V_2O_5 particles and oxidation of the As_2S_3 particles by the dissolved vanadic acid rather than through collision of the particles. **II. Reactions between silver halide sols and sols of As_2S_3 and Sb_2S_3.** *Ibid.* 711-24.—Similarly, it was shown by measuring the activity of Ag ions that reaction between Ag halide sols and sols of As_2S_3 and Sb_2S_3 takes place on the particles of the Ag halide or the particles of As_2S_3 or Sb_2S_3 depending upon the relative soly. of the reactants. **III. Reactions between colloidal solutions of sulfur and mercury.** *Ibid.* 725-32.—In cases in which there is no possibility of true soln. of the particles, reaction between the colloids does not take place even if the substances composing the colloid particles are capable of reacting with one another on direct impact as in the case of Hg and S. The condition necessary for reaction is the possibility of the passage of the substance of the particles into true soln.

A. L. Kibler

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